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Iceland: The Financial and Economic Crisis

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ICELAND: THE FINANCIAL AND ECONOMIC CRISIS

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By David Carey

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ABSTRACT/RESUMÉ

Iceland: The financial and economic crisis

The global financial and economic crisis has struck Iceland with extreme force. Iceland's three main banks, accounting for almost all of the banking system, failed in October 2008. They were unable to resist the deterioration in global financial markets following the failure of Lehman Brothers. The banks had pursued risky expansion strategies – notably borrowing in foreign capital markets to finance the aggressive international expansion of Icelandic investment companies – that made them vulnerable to the deterioration in global financial markets. They had also grown to be too big for the government to rescue. When access to foreign capital eventually closed, the banks failed. Non-financial firms and households were also vulnerable to the deterioration in global financial conditions, having taken on a lot of debt in recent years based on inflated collateral values. In some cases, the debt was foreign-currency denominated, without matching foreign-currency assets or revenues. In the wake of the banking crisis, the government obtained an IMF Stand-By Arrangement to provide favourable access to foreign capital markets and creditability for the recovery programme. Even so, the recession is likely to be deeper in Iceland than in most other OECD countries owing to the seriousness of the banking crisis and the weakness of private sector balance sheets. Reforms are needed to strengthen prudential regulation and supervision.

This Working Paper relates to the 2009 Economic Survey of Iceland.
(www.oecd.org/eco/surveys/Iceland)

JEL classification: E44; G20; G21; G28; R21
Key words: financial crisis; banking crisis; investment companies; international investment position; credit-induced asset price boom; foreign exchange exposure; currency crisis; prudential supervision and regulation; micro-prudential supervision; macro-prudential supervision; deleveraging; IMF stand-by arrangement; Iceland.

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Islande: La crise économique et financière

La crise économique et financière mondiale a frappé l'Islande avec une violence extrême. Les trois principales banques du pays, qui représentaient pratiquement l'ensemble du système bancaire, ont fait faillite en octobre 2008. Elles n'ont pas réussi à résister à la détérioration des marchés de capitaux mondiaux dans le sillage de la faillite de Lehman Brothers. Les banques avaient suivi des stratégies de développement risquées – empruntant notamment sur des marchés financiers étrangers pour soutenir une expansion internationale dynamique des sociétés d'investissement islandaises – ce qui les a rendues vulnérables à la détérioration des marchés de capitaux mondiaux. Elles avaient également atteint une taille trop importante pour que le gouvernement puisse venir à leur rescousse. Lorsque l'accès aux capitaux étrangers a été finalement fermé, les banques ont fait faillite. Les entreprises non financières et les ménages – qui s'étaient massivement endettés ces dernières années profitant de la forte valorisation de leurs garanties – étaient aussi vulnérables à la détérioration de la situation financière mondiale. Dans certains cas, la dette était libellée en devises sans que les emprunteurs n'aient d'actifs ou de revenus dans ces devises susceptibles de compenser le risque de change. À la suite de la crise du système bancaire, les pouvoirs publics ont conclu un accord de confirmation avec le FMI pour assurer des conditions d'accès favorables aux marchés de capitaux étrangers et soutenir la crédibilité du programme de redressement économique. Malgré cela, il est probable que la récession sera plus profonde en Islande que dans la plupart des autres pays de l'OCDE en raison de la gravité de la crise bancaire et de la faiblesse des bilans des entreprises et des patrimoines des ménages dans le secteur privé. Des réformes sont nécessaires pour renforcer la réglementation et la surveillance prudentielle.

Ce document de travail se rapporte à *l'Etude économique de l'OCDE de l'Islande 2009*.
(www.oecd.org/eco/surveys/Islande)

Classification JEL : E44 ; G20 ; G21 ; G28 ; R21
Mots clés : crise financière ; crise bancaire ; sociétés d'investissement ; position d'investissements internationaux ; envolée du cours des actions induite par le crédit ; exposition au risque de change ; crise monétaire ; la surveillance et la réglementation prudentielle ; la surveillance micro prudentielle ; la surveillance macro prudentielle ; réduction de l'effet de levier ; accord de confirmation avec le FMI ; Islande.

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Iceland: The financial and economic crisis

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1. Iceland's three main banks, which accounted for 85% of the banking sector, were put into receivership in October 2008. They were unable to resist the deterioration in global financial markets that occurred following the disorderly failure of Lehman Brothers. While the global financial crisis has pushed almost all OECD countries into recession, the collapse of Iceland's banking system means that the recession is likely to be more severe there than elsewhere.

2. The Icelandic banks had pursued risky strategies – notably borrowing large sums in foreign capital markets to finance the international expansion of Icelandic investment companies – that made them particularly vulnerable to the deterioration in global financial markets. They had also engaged in a variety of practices that should have been more effectively restrained by prudential supervision. In the end, the banks had become so big in relation to the Icelandic economy that the government could not rescue them. When foreign sources of capital were cut off, the banks failed.

3. Adjustment to the crisis is likely to be painful for Iceland's non-financial firms and households. They had taken on a lot of extra debt during the boom years based on inflated asset values. In some cases, the debt was foreign-currency denominated without matching foreign-currency assets or revenues. Now that asset prices have fallen and the króna has depreciated sharply, firms and households are confronted with an urgent need to deleverage their balance sheets.

4. In the wake of the collapse of the banks, the government obtained an IMF Stand-By Arrangement (SBA) to provide favourable access to foreign capital markets and credibility to the recovery programme. It aims to prevent a further sharp depreciation of the króna to reduce the risk of adverse balance sheet effects, ensure medium-term fiscal sustainability, and develop a comprehensive bank restructuring strategy.

5. A major lesson to emerge from Iceland's experience is that macro-prudential supervision cannot be effective unless it has access to the required information from the micro-prudential supervisor and can impact micro-prudential supervision to restrain bank behaviour that puts financial stability at risk. There is also much to do to improve the quality of micro-prudential supervision in Iceland.

6. The paper begins with a discussion of the factors that made the banks, non-financial firms, and households, respectively, vulnerable to deterioration in global financial markets. It goes on to describe the failure of the banks, its direct impact on government debt, the IMF SBA, and the economic outlook. The paper concludes with a discussion of improvements in prudential regulation and supervision that need to be made in light of the crisis.

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1. The paper was originally produced for the 2009 OECD Economic Survey of Iceland, published in August 2009 under the authority of Economic and Development Review Committee of the OECD. I would like to thank, without implicating, Andrew Dean, Robert Ford, Patrick Lenain and Andrea De Michelis, for valuable comments and/or discussions. I am also grateful to Roselyne Jamin for technical assistance and to Pascal Halim for secretarial assistance.

Iceland's three main banks became vulnerable to a deterioration in global financial markets

Local investor groups gained control of the banks following privatisation

7. The results of the bank privatisation process, which occurred as part of the liberalisation of financial markets (Box 1), laid the foundations for the problems with the banks that followed. Instead of spreading ownership among several institutional investors and private households or selling to a reputable foreign bank (at least one was showing interest but was turned down, probably for protectionist reasons), a controlling stake of over 40% in Landsbanki, then the country's biggest bank, was sold to one local investor group (Samson) (Jännäri, 2009). The sale was largely a political decision. The Financial Supervisory Authority (FME) was not satisfied with the result but gave its approval in early 2003 after lengthy deliberations. This sale created a precedent that prevented the FME from blocking the concentration of ownership in the other two major banks, Kaupthing and Glitnir, when they were created through mergers. This gave controlling shareholdings in all three of the main banks to local investor groups. The Jännäri report, which was commissioned by the authorities to recommend improvements in prudential regulation and supervision in the wake of the collapse of the banks, noted that "for the most part, the new owners and the people behind them were not traditional commercial bankers; instead, they had the mindset of investment bankers, which favoured a strategy of rapid growth and highly leveraged, aggressive deals" (Jännäri, 2009, p. 14).

Box 1. Liberalisation of financial markets

Financial markets were highly regulated until the 1980s (Danielsson and Zoega, 2009, for the first two paragraphs of this Box). The three main banks were government owned, heavily regulated and highly politicised (politicians were represented on banks' boards and loan decisions were often made on the basis of political affiliation and connections). Political factors also influenced the structure of the Central Bank Board, which until recently had three governors, each representing one of the main political parties. There were foreign exchange controls and a fixed exchange rate regime. The exchange rate peg was adjusted frequently, especially in the 1970s and 1980s, with a view to making average profits in the fishing industry equal to zero. This made it difficult to diversify the economy because the exchange rate was maintained at too high a level for most other industries to prosper, a case of the Dutch disease.

The liberalisation of financial markets that had begun in the 1980s accelerated in the 1990s, not least because of the obligations and opportunities created by the decision to join the European Economic Area (EEA) in 1994.[1] Bank regulation was brought into line with that in other EEA countries and foreign exchange controls were abolished. The exchange rate was allowed to float in bands that grew progressively wider until 2001, when the exchange rate was allowed to float freely and an inflation targeting regime was put in place. The three large banks were progressively privatised from the late 1990s to 2003, but there were widespread accusations of political favouritism when the banks were privatized.

Iceland's banks obtained the right to open branches or subsidiaries in any EEA country through the EEA agreement; concomitantly, banks from other EEA countries correspondingly gained the right to open branches or subsidiaries in Iceland, although none has done so. Under the EEA agreement, responsibility for prudential supervision of bank branches falls on the home country while the host country is responsible for the supervision of subsidiaries. Similarly, the deposit guarantee coverage stipulated in the EU Deposit Guarantee Schemes Directive is provided by the home country deposit guarantee scheme for branches and by the host country scheme for subsidiaries.[2]

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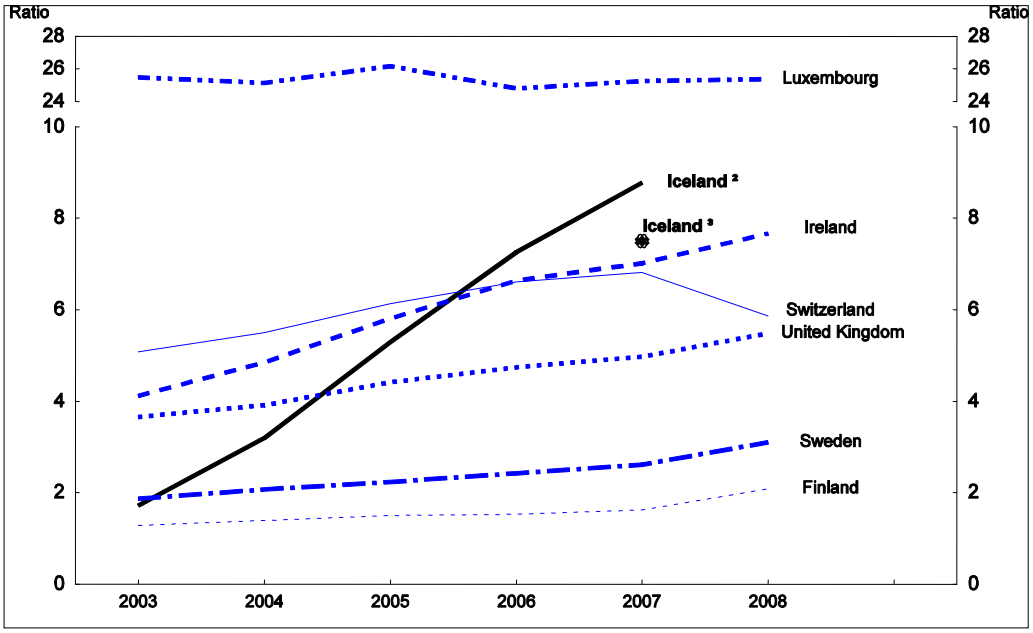
1. The EEA agreement essentially extends the freedom of movement of goods and services, capital, and labour enjoyed by EU members to Iceland but without EU membership. All relevant EU directives have had to be transposed into Icelandic law, as in other EEA countries.

2. The home country of a branch of a subsidiary is considered to be the country in which the subsidiary is registered. For example, the home country of a German branch of a Luxembourg subsidiary of an Icelandic bank is Luxembourg.

The banks became very large in relation to the Icelandic economy

8. The newly privatised Icelandic banks took advantage of the opportunities afforded them by the liberalisation of financial markets and the EEA agreement, as well as by easy global monetary conditions, to embark on a massive expansion of their activities. The consolidated assets (*i.e.* including the assets of Icelandic banks' foreign subsidiaries) of the three main banks grew from 170% of GDP at the end of 2003 to 880% of GDP by the end of 2007 (Figure 1). Moreover, the level reached by the end of 2007 was high by international comparison, albeit similar to the ratios in Ireland and Switzerland, although dwarfed by the ratio in Luxembourg. In Luxembourg, however, bank assets belong to subsidiaries of foreign banks while in Ireland this applies to 40% of bank assets (de Larosière (Chair), 2009, p. 71). This limits the burden on both countries to stand behind the banks. Switzerland is also a different case because its banks are so big globally that they are systemically important in other countries, raising the possibility that there would be a global response if these banks were about to fail. In Iceland, by contrast, assets belonged to domestic banks that were not systemically important anywhere but in Iceland. Only the Icelandic government potentially stood behind these banks, but they were very big in relation to the Icelandic economy, making such support a tall order.

Figure 1. Ratio of bank assets to GDP[1]



1. Assets of domestically registered banks as at December – excludes assets of foreign subsidiaries.
2. Consolidated assets of the three largest banks – includes foreign subsidiaries' assets.
3. Data for the assets of domestically registered banks (excluding foreign subsidiaries' assets) are only available from July 2007.

Source: Central Banks of the countries shown.

9. The banks rapidly expanded both domestic assets (*i.e.* claims on residents) and foreign assets (*i.e.* claims on non-residents). By the end of 2007, Domestic Money Banks' (DMBs', which include the three main banks as well as all other domestically registered banks) unconsolidated assets were evenly divided between foreign and domestic assets. However, 70% of unconsolidated liabilities were to non-residents.[2]

2. No data are available on the breakdown of the three main banks' consolidated liabilities between residents and non-residents.

The banks pursued a highly risky core strategy

10. An important element of the banks' expansion strategy was to borrow in foreign capital markets to finance loans to a few Icelandic investment companies (such as Baugur and Samson), typically controlled by the main shareholders of the banks, that were taking equity stakes in foreign firms. The effects of this strategy are evident in Iceland's International Investment Position (IIP), which records residents' net claims on non-residents broken down into equity and debt. Net external debt increased by 142% of GDP over the four years to the end of 2007, almost all of which was attributable to the banks, while net equity assets rose by 99% of GDP, most of which was attributable to non-financial firms (Figure 2, Table 1). This increase in net equity assets reflected purchases rather than revaluation effects as net external assets (and debt) are recorded at historic cost in US dollars and the exchange rate did not change greatly over this period. Net external debt and net external equity assets reached by far the highest levels as a share of GDP amongst OECD countries (Table 2). The net external equity position was extraordinary given that even countries that have been investing abroad for decades did not have remotely comparable net equity holdings in relation to GDP. Iceland's IIP had come to resemble the balance sheet of a hedge fund, with large debt-financed equity positions.

Table 1. External equity assets

(as a % of GDP)

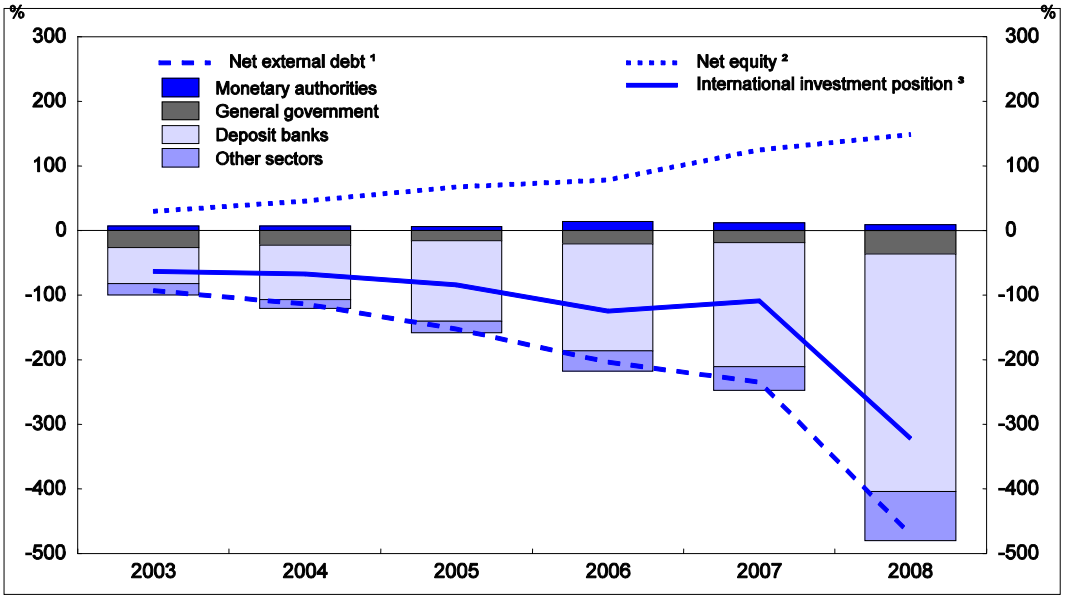
	2003	2007	Change
Residents' external equity assets	43	214	171
of which			
Domestic Money Banks (DMBs)[1]	2	23	21
Other Domestic Credit Institutions[2]	17	27	10
Other – mainly non-financial firms[3]	24	164	140
Non-residents' equity assets in Iceland	12	85	72
Net external equity assets	31	129	99

1. Domestic Money Banks are domestically registered banks, the largest of which are Kaupthing, Landsbarki and Glitnir.
2. Mainly pension funds.
3. Other sectors include non-financial firms, households, general government and the central bank. Neither the general government nor the central bank held significant equity assets over this period. The household sector's direct holdings of equities (indirect holdings have already been taken account of through other domestic credit institutions) did not increase very much over this period (IMF, 2008a, p. 11)

Source: Central Bank of Iceland, Statistics Iceland and OECD calculations.

Figure 2. International investment position

End of year, as per cent of GDP



1. Net external debt is residents' debt claims on non-residents net of non-residents' debt claims on residents.
2. Net external equity is residents' equity assets (*i.e.* foreign direct investment and portfolio investments in shares) abroad net of non-residents' equity assets in Iceland.
3. The international Investment Position (IIP) is the sum of net external debt and net external equity asset positions.

Source: Central Bank of Iceland, Monetary Bulletin, 2009-2.

11. This strategy indirectly exposed the banks to global equity market risk through the loans to the highly leveraged Icelandic investment firms that were buying foreign equity assets. In the event of a serious downturn in global equity markets, these firms risked becoming insolvent, resulting in credit losses for the banks. In addition, the banks had indirect exposure to equity market risk through purchases of shares on behalf of clients coupled with forward contracts to sell the securities back to the clients, not all of whom were the investment companies. This arrangement amounts to a collateralised loan. Such arrangements economised on regulatory capital because it only had to be held for the difference between the values of the two transactions instead of for the entire amount of the loan. The downside is that such arrangements exposed the bank to equity market risk if the counterparty was unable to buy back the shares at the agreed price, as occurred following the stockmarket crash. Worse, the shares in question were often in the bank itself or in another Icelandic bank. This raised the risk that any shock to the banking system would be amplified, as indeed occurred when the banks failed and they were holding large amounts of worthless bank shares as collateral for loans to the banks' bankrupt owners.

Table 2. International investment positions in OECD countries, 2007

As per cent of GDP

	International investment position	Net equity	Net external debt
Iceland	-105	129	-234
Greece	-94	-28	-66
Hungary	-92	-54	-39
Portugal	-90	-30	-60
New Zealand	-87	-30	-57
Spain	-70	-7	-63
Australia	-62	-13	-49
Poland	-50	-37	-13
Slovak Republic	-49	-48	-2
Turkey	-44	-29	-15
Mexico	-38	-37	-2
Czech Republic	-35	-48	13
Finland	-27	-31	4
Korea	-22	-25	3
United Kingdom	-21	15	-36
United States	-18	22	-39
Ireland	-16	-194	178
Austria	-15	-3	-12
Euro Area	-14	-8	-6
Canada	-8	9	-17
Denmark	-7	28	-35
Sweden	-6	29	-35
Italy	-5	27	-33
Netherlands	2	15	-13
France	13	25	-11
Germany	27	11	16
Belgium	29	18	10
Japan	49	-6	54
Norway	55	34	21
Luxembourg	104	-2 667	2 772
Switzerland	139	18	122

Source: Central Bank of Iceland; IMF, International Finance Statistics.

The banks relied too heavily on wholesale funding

12. Iceland's banks relied heavily on wholesale funding. Such funding was abundant and relatively inexpensive during the period in which they were expanding and could be more quickly mobilised than deposits, which was an important consideration given the ambition of the banks' expansion plans. The banks' average loan-to-deposit ratio rose quickly to a peak of 3.2 in 2005, although it was brought back down to 2.0 by the end of 2007 following an aggressive drive to expand foreign deposits through Internet-based banking, notably in the United Kingdom (Icesave) (Table 3, Figure 3). These ratios are high by international comparison for universal banks. For example, the ratio for HSBC, Europe's biggest bank, has been between 0.84 and 1.0 in recent years. The problem with relying heavily on wholesale markets for

funding is that they are less stable than deposits. Indeed, access to such funding can shut down altogether and quickly, as occurred as fears about the solvency of the Icelandic banks grew in the wake of the global financial crisis.

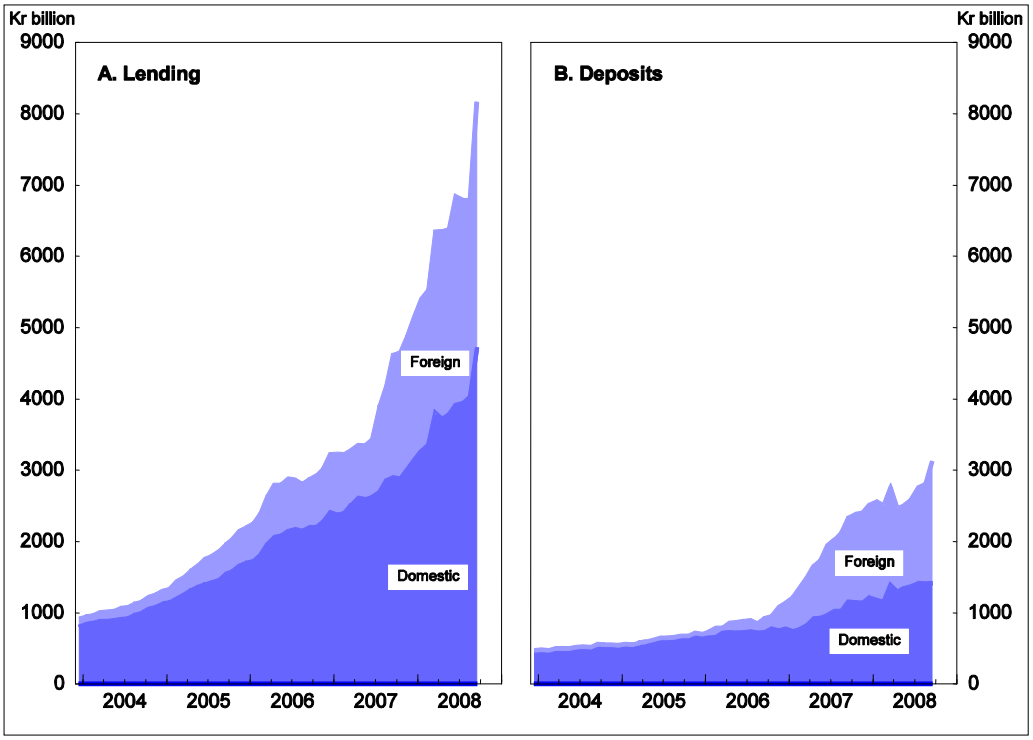
Table 3. Domestic Money Banks' loan-to-deposit ratios[1]

	Loans[1]	Deposits[2]	Ratio
2003	918.6	474.8	1.9
2004	1 314.0	539.2	2.4
2005	2 202.8	699.1	3.2
2006	3 224.2	1 139.3	2.8
2007	5 140.5	2 515.1	2.0
2008-September	8 168.4	3 123.3	2.6

1. End of year unless otherwise specified.
2. Billions of ISK.

Source: Central Bank of Iceland; OECD calculations.

Figure 3. Lending and deposits by customer residence



Source: Central Bank of Iceland.

There were problems with large exposures, quality of capital, and adequately supervising the banks

13. The three main banks had unusually large exposures to highly leveraged firms or individuals whose main activity was investing in shares or other venture capital or speculative activities (Jännäri, 2009). The Jännäri report notes that it is very unusual for banks as large as these to have so many large exposures of this nature. Moreover, some of the customers with large exposures had loans from more than one of the banks, raising systemic stability concerns. It was very difficult for the FME to supervise compliance with rules on large exposures and connected lending owing to the banks' complex and opaque ownership structures.

14. There were also concerns about the quality of the banks' capital. The controlling shareholders, who were highly indebted, had been allowed to borrow up to two thirds of their invested capital from the bank, with the shares in the bank being the collateral for the loans. When these shareholders and the banks got into difficulty, the loans had to be substantially written down, reducing the banks' own capital.

15. In addition, the FME was not able to supervise adequately such a large and complex banking system. According to the Jännäri report, "…the FME (Financial Supervisory Authority) staff was much too small, both in numbers and variety of skills, to supervise and regulate a banking system as large and internationally active as that in Iceland" (Jännäri, 2009, p. 7). Concerns in financial markets that the Icelandic banks were not as closely supervised as other banks in the EU, despite prudential regulations being in compliance with EU and Basel rules, appear to have been well founded.

Private sector balance sheets became vulnerable after rapid expansion

A credit-induced asset price boom occurred

16. Domestic credit (from all domestic credit institutions, not just the banks) to the non-financial private sector grew at an annual average rate of 30% over the four years to the end of December 2007, when the banks were expanding rapidly (Table 4). Most of this growth was attributable to the banks, which substantially increased their market share. Domestic credit to non-financial companies grew at a much faster annual average rate than to households. The banks maintained a high share of credit to non-financial companies but doubled their market share of credit to households, although such credit remained a small part of the banks' total lending.

Table 4. Domestic Credit

% of GDP

	(DMBs)[1] Domestic Money Banks			Other Domestic Credit Institutions			Total		
	Non-financial firms	Households	Total	Non-financial firms	Households	Total	Non-financial firms	Households	Total
2003	75	22	98	24	70	93	100	92	191
2004	92	33	125	30	61	91	122	94	216
2005	128	53	181	36	53	89	164	106	270
2006	159	61	220	47	52	99	206	113	319
2007	186	64	250	51	55	106	237	119	356

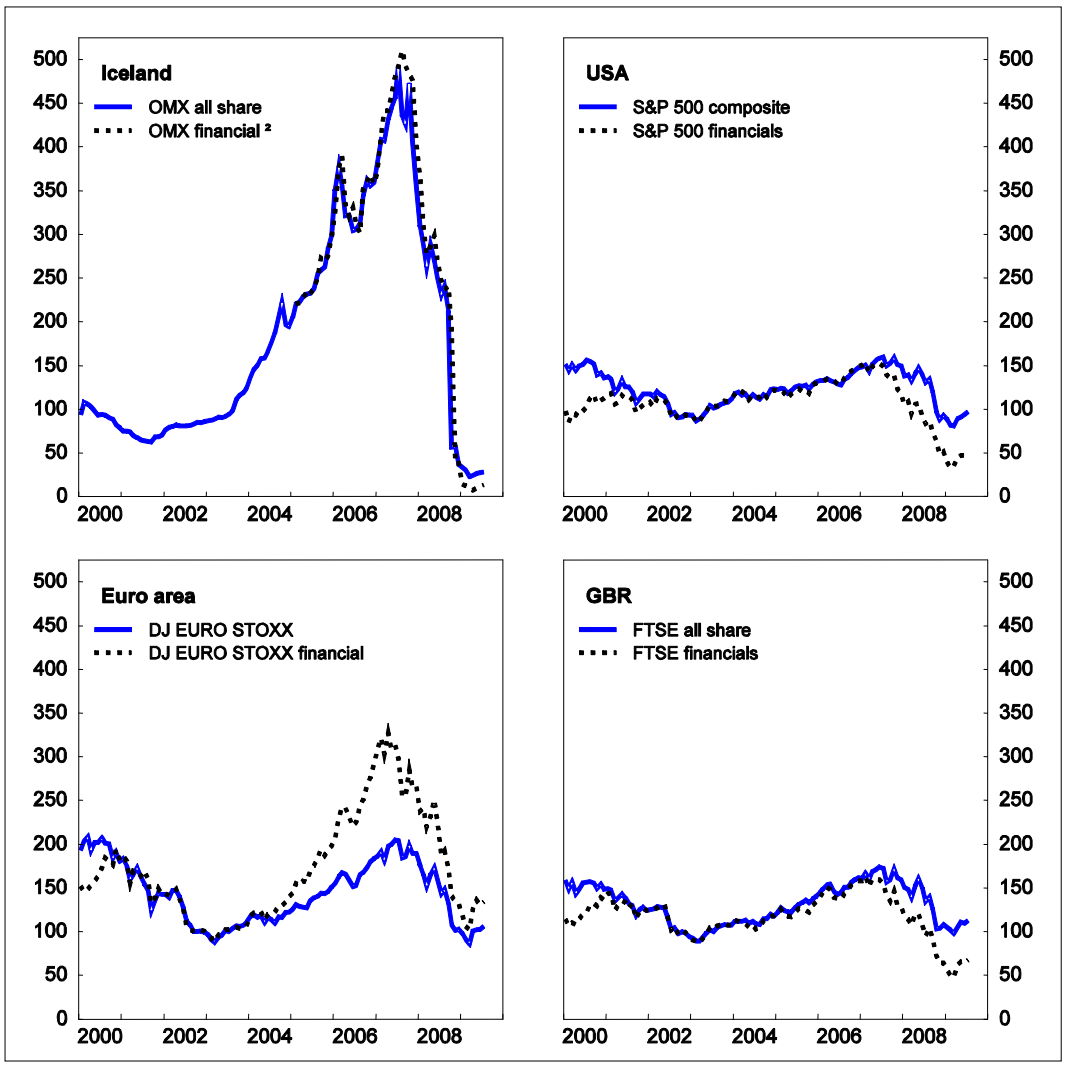
1. Domestic Money Banks are domestically registered banks.

Source: Central Bank of Iceland, Statistics Iceland and OECD calculations.

17. High rates of domestic credit growth put strong upward pressure on domestic equity prices. The Icelandic stock-market (OMX Iceland All Share) rose by 390% over the four years to mid-2007, when it peaked (Figure 4). This increase far exceeded those in stock-markets in other OECD countries. Iceland's stock-market capitalisation relative to GDP soared from two thirds of GDP in mid-2003 to 2½ times GDP four years later (Figure 5). This large increase to a high level of stock-market capitalisation relative to GDP is suggestive of a large stock-market bubble having developed. This impression is reinforced if allowance is made for the fact that non-household operating surplus fell from 21% of GDP in 2003 to 16% of GDP in 2007, indicating that stock-market capitalisation increased by even more relative to (National Accounts based) corporate profits than to GDP.

Figure 4. Stock market developments[1]

Index, 2003 = 100

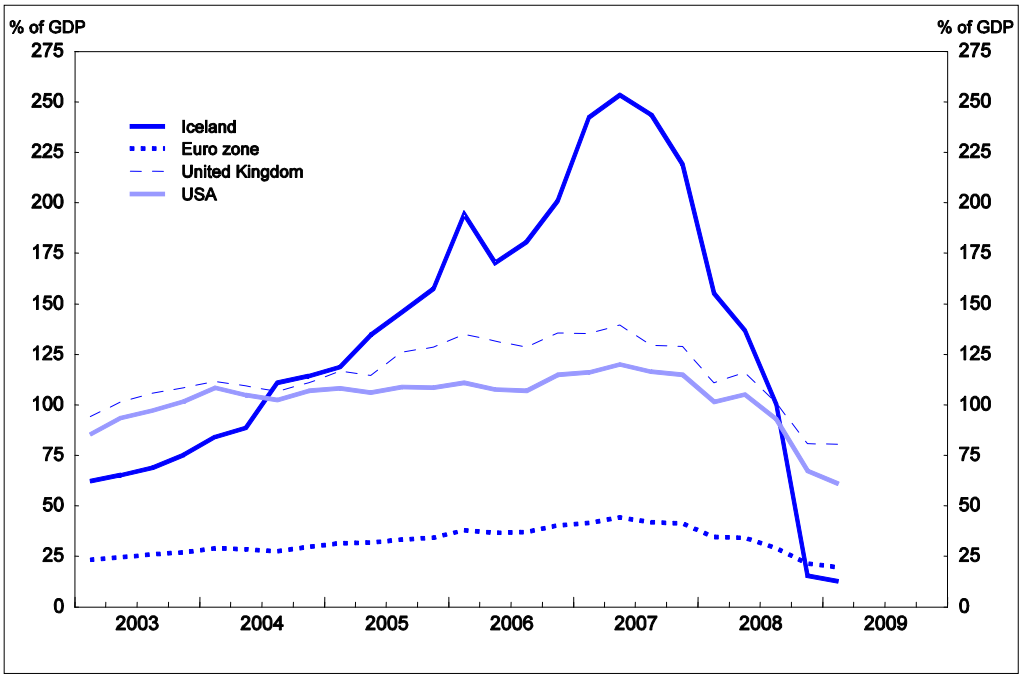


1. Mid-month data.

2. As OMX financial data start in mid-January 2005, they have been indexed to the value of the OMX all-share index at this time.

Source: Datastream.

Figure 5. Stock-market capitalisation relative to GDP[1]



1. For Iceland, capitalisation of the ICEX main list, other and First North; euro area: DJ EURO STOCX; United Kingdom: FTSE all shares; USA: Datastream index.

Source: Statistics Iceland; Datastream; OECD, Analytical database.

18. House prices also rose sharply, although nowhere near as spectacularly as the increase in equity prices. Real house prices rose by 89% between the first quarter of 2000 and the fourth quarter of 2007, when they peaked (Figure 6). The increase was particularly pronounced in 2005, when the banks were aggressively expanding their share of mortgage lending (from a low base).[3] The increase in real house prices this decade was comparable to those that occurred in a number of OECD countries that also experienced house price booms. Real house prices have begun to fall in all of these countries, with the decline in Iceland being particularly rapid: half of the increase to the peak had been reversed by early 2009. The increase in house prices in relation to disposable income[4] was, in contrast, relatively modest by international comparison (Figure 7). This measure of affordability has been improving since 2006 and had regained the levels prevailing before the credit boom by 2008. The ratio of house prices to actual rentals rose considerably more than the ratio of prices to imputed rentals – it became much more expensive to own a house than to rent one, despite a fall in real interest rates –, indicating that house prices became highly overvalued (assuming that they were not undervalued to begin with) (Figure 8). This ratio had fallen back to the level at the beginning of 2003 by early 2009. On a similar basis, house prices also became overvalued in a number of other OECD countries in recent years (OECD, 2005, EO 78).[5]

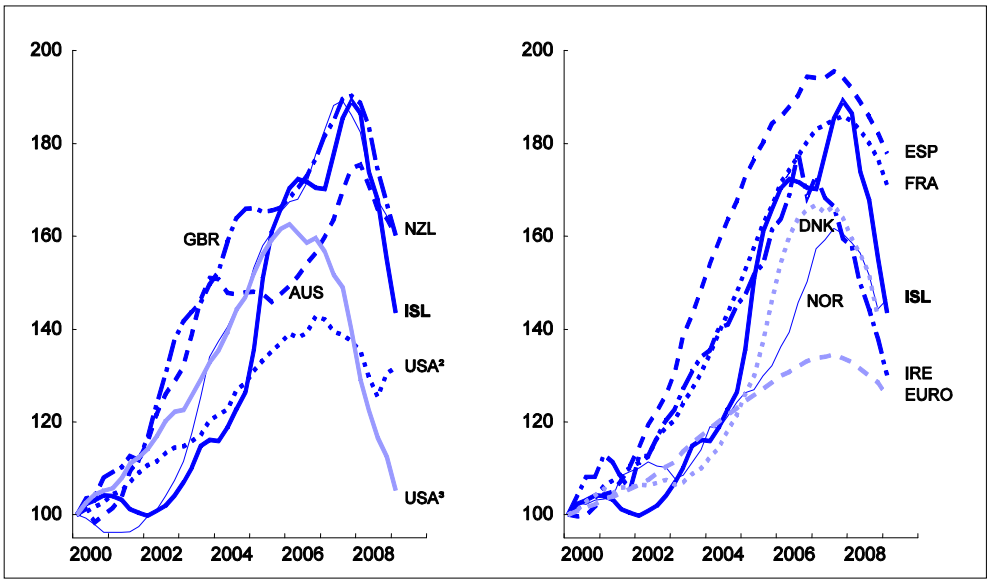
3. The effects of the structural changes in the domestic mortgage market (greater access to credit and lower mortgage rates) on domestic housing prices were analysed in Elíasson and Pétursson (2009). They predicted in this paper, which was originally written in 2005-06, the housing bubble and its subsequent collapse.

4. Disposable income is measured before the deduction of interest payments as the aim is to measure affordability rather than how much disposable income remains after paying interest costs, most of which are related to housing loans.

5. Direct comparisons between Figure 1.8 and Figure III.5 in OECD (2005) are difficult to make because the formulas used for calculating the user cost of capital were somewhat different. The Icelandic measure

Figure 6. Cumulative growth in real house prices[1]

Index, 2000 Q1 = 100

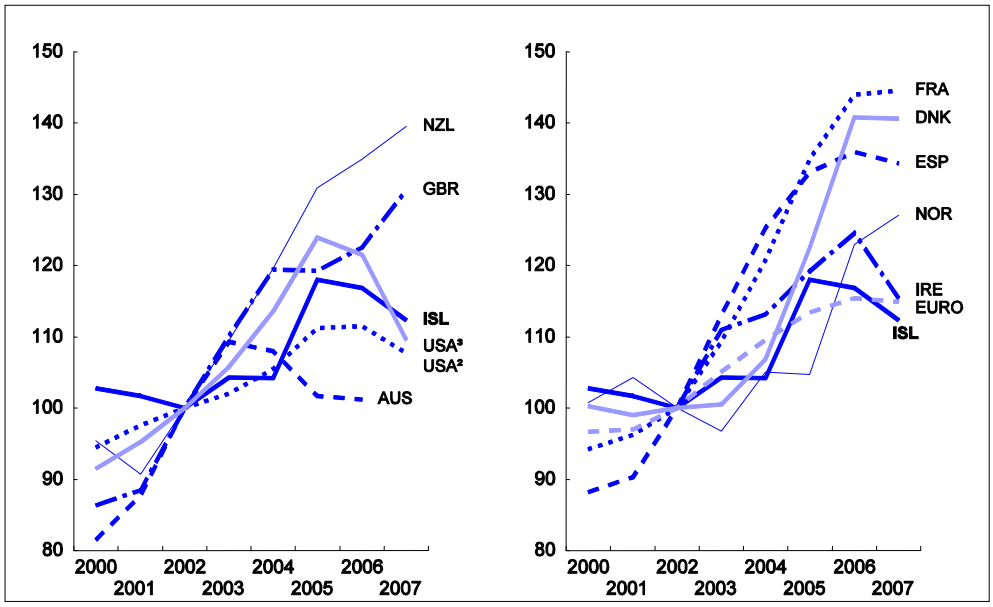


1. Deflated by the harmonised CPI. For Australia, United States and New Zealand, the RBA index, all groups excluding housing and financial and insurance services, has been used.
2. Office of Federal Housing Enterprise Oversight (OFHEO).
3. Case Schiller.

Source: Statistics Iceland; Reserve Bank of Australia and OECD Economic Outlook database.

Figure 7. Cumulative growth in the ratio of house prices to disposable income[1]

Index, 2002 = 100



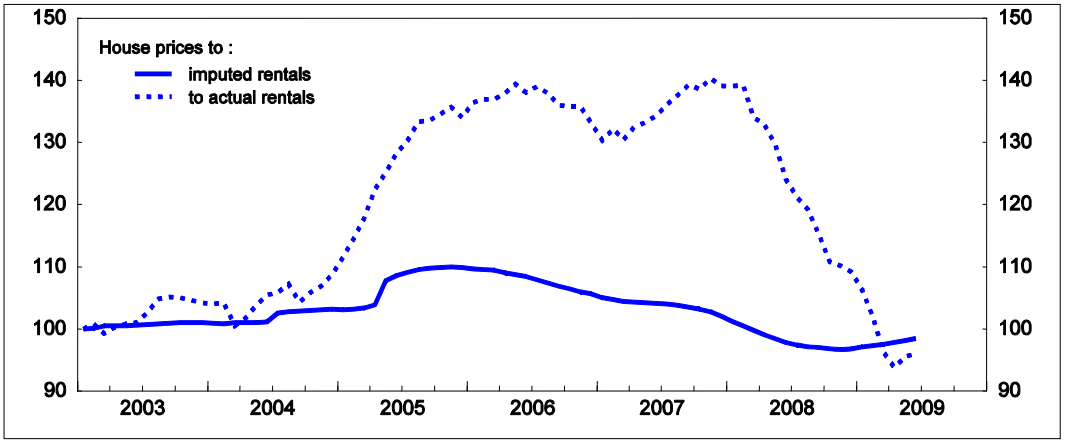
1. Household disposable income before interest payments.
2. Office of Federal Housing Enterprise Oversight (OFHEO).
3. Case Schiller.

allows for real capital gains but not for taxes, in contrast to the OECD measure, and measures depreciation differently (an inverse geometric form in Iceland, a constant rate in the OECD calculations).

Source: Statistics Iceland; Reserve Bank of New Zealand and OECD Economic Outlook database.

Figure 8. Ratio of house prices to actual and imputed rentals

Index January 2003 = 100



Source: Statistics Iceland.

Non-financial firms' debt increased markedly, exposing them to the risk of financial stress

19. Stock-market gains provided collateral for non-financial firms to borrow to expand. Their total debt more than doubled as a share of GDP over the four years to the end of 2007, to 284% (Table 5). The increase in this ratio and the level reached are both high by international comparison; according to the IMF (2008b), this compares with 73% in the United States, 77% in the Euro area (2005) and 278% in the United Kingdom (financial liabilities, which include equities[6]). Despite this large increase in debt, financial leverage (the ratio of total assets to market capitalisation[7]) remained steady (at 3.2-3.4) until 2006 thanks to the massive boom in stock-market valuations, but rose markedly in 2007 (to 4.1), when the stock-market began to fall. These financial leverage ratios are high by international comparison.[8] The risk of having high financial leverage ratios based on inflated asset values is that when they fall, firms no longer have enough collateral to support the current level of debt. They are likely to have access to further credit cut off and to have difficulty rolling over maturing credit lines. To stay afloat in these circumstances, firms must deleverage by selling assets, even at fire sale prices, and maximise operating cash surpluses.

20. It is likely that most of this increase in debt was attributable to the Icelandic investment companies that acquired such substantial external asset holdings. The increase in non-financial firms' external assets represented a high proportion of the total increase their debt (see Table 5). Moreover, most of the increase in external equity assets occurred through foreign direct investment, which the investment companies were engaged in but was beyond the scope of most other Icelandic companies. In this case, the proportionate increase in debt of other non-financial firms was more modest than indicated by the gross

6. Total financial liabilities (including equities) of non-financial companies in Iceland to the domestic credit system, which are the figures comparable to those for the United Kingdom, rose from 138% of GDP in 2003 to 297% of GDP in 2007.

7. Stock-market capitalisation of non-financial firms in Iceland has been approximated by deducting from total stock-market capitalisation (as reported by the Central Bank of Iceland) the stock-market capitalisation of the three main banks (Kaupthing, Landsbanki, and Glitnir), as reported in their annual reports.

8. By way of comparison, the median financial leverage ratio for S&P 500 industrial companies at the end of 2008 was 2½.

data, suggesting that the need for deleveraging will also be less although not negligible given that debt was already high before the investment firms' international expansion and that not all of the increase in debt can be attributed to the acquisition of external assets. For the large investment companies, the deleveraging process is the most extreme possible – they are being liquidated. As this process proceeds, their debts will be eliminated through asset sales and writing off remaining unpaid loan balances.

Table 5. Estimated debt and external assets of non-financial firms[1]

ISK billions

	Domestic debt			External debt[4]	Total debt	External[5] assets	Foreign currency debt[6]	
	DMBs[2]		Non-DMB[3] domestic credit institutions					
	Foreign-exchange linked	Other					Low estimate	High estimate
2003	323.7	309.0	204.7	173.8	1 011.2	208.1	323.7	611.2
(%GDP)	(38)	(37)	(24)	(21)	(120)	(25)	(38)	(83)
2007	1 382.8	1035.0	666.9	614.7	3 699.4	2 179.4	1 382.8	2 664.4
(%GDP)	(106)	(80)	(51)	(47)	(284)	(167)	(106)	(204)
Change	1 059.1	726.0	462.2	441.0	2 688.2	1971.3	1 059.1	1 962.3
(%GDP)	(68)	(43)	(27)	(26)	(164)	(142)	(68)	(121)

1. As of December of each year.
2. Domestic Money Banks are domestically registered banks.
3. Non-DMB domestic credit institutions comprise: miscellaneous credit undertakings (including the Housing Finance Fund); pension funds; mutual funds and investment funds; and insurance companies.
4. External debt of non-financial firms is approximated by deducting the external debt of non-DMB credit institutions (as reported for each category listed in footnote 3 by the Central Bank of Iceland) from the external debt of "other sectors" (*i.e.* other than the monetary authorities, general government, and DMBs), as reported by the Central Bank of Iceland. For information, the external debt of 'other sectors' increased from 22% of GDP in 2003 to 52% of GDP in 2007.
5. External assets of non-financial firms are approximated by using the same methodology as for external debt (*i.e.* by deducting the foreign assets of non-DMB credit institutions from the foreign assets of other sectors). The external equity assets of 'other sectors' are obtained by deducting the DMBs' external equity assets from total external equity assets (general government has no external assets and it is assumed that the Central Bank does not have external equity assets). Other external assets of 'other sectors' are given by the difference between their net external debt position and their external debt. For information, the external assets of 'other sectors' increased from 45% of GDP in 2003 to 207% of GDP in 2007.
6. It is assumed that all debt to non-DMB domestic credit institutions and all external debt are in Icelandic króna in the low estimate and in foreign currency in the high estimate.

Source: Central Bank of Iceland, Statistics Iceland and OECD calculations.

21. There is also likely to have been a large increase in non-financial firms' foreign-currency denominated debts in recent years, again concentrated in Icelandic investment companies, although probably not in unhedged foreign-currency exposures for such firms in aggregate. As noted above, most of the increase in debt is likely to have been incurred by the investment companies. Borrowing in foreign currency would have given them the foreign exchange needed to buy external assets as well as providing a hedge against króna exchange rate risk. Unfortunately, the only data on non-financial firms' debt that are broken down into domestic and foreign currency components are for debt owed to domestic banks. If this were non-financial firms' only foreign currency debt, it is nowhere near enough to have financed the increase in external assets (see Table 5, low estimate). In this case, investment companies could account for all of the increase in foreign currency debt and non-financial firms as a whole would have substantially increased their exposure to foreign exchange risk by taking a large, long foreign-currency position (*i.e.*, more foreign currency assets than liabilities) by the end of 2007. Alternatively, even if all of the debt to domestic credit institutions other than the banks and to non-residents were foreign-currency denominated, there would still only be a small part of the increase in foreign-currency debt that could not be accounted for by the investment companies (see Table 5, high estimate). Moreover, non-financial firms

taken together would still have reduced their short foreign-currency position since 2003, albeit to a still significant level. As the investment companies are liquidated, most of the foreign-currency debts and assets will be eliminated, as discussed above. The remaining non-financial firms' balance sheets are likely to be less at risk from a depreciation of the króna than they were in 2003 but still at risk.

22. This discussion about foreign exchange exposures highlights lacuna in the data. It is important that the authorities find out quickly how much foreign-currency debt is owed by non-financial firms that are not already in receivership and the extent to which this debt is hedged in order to make an informed assessment about the likely impact of any further substantial currency depreciation on firms' balance sheets; increases in foreign-currency debt for companies that are being liquidated does not make any difference to their prospects of survival.

Household debt also rose, increasing the risk of financial stress

23. Booming asset prices resulted in a large rise in household assets – approximately 70% of assets are subject either to real estate market risk or equity market risk, with the latter risk mainly being indirect through pension funds[9] – despite persistently negative household saving rates (Table 6). In all, household assets increased by one third as a share of GDP between 2003 and 2007, reaching over 400% of GDP in 2007. This increase was evenly split between real assets (essentially housing) and financial assets, each of which represents about one half of total assets.

Table 6. Household net wealth composition and dynamics

% of GDP

	2003	2004	2005	2006	2007
Composition					
Real assets	150	163	190	190	200
Other assets	155	176	201	208	210
Total assets	305	339	391	398	410
Liabilities	92	94	106	113	120
Net wealth	213	245	285	285	290
Dynamics					
Change in net wealth		32.5	40.0	0.0	5.0
Saving before net interest payments	-4.7	-4.8	-6.0	-3.9	-1.9
Change due to returns in excess of GDP growth[1]		37.3	46.0	3.9	6.9
Implicit nominal rate of return		28.0	29.3	15.2	13.8
Implicit real rate of return[2]		25.4	25.3	10.8	6.8

1. This is calculated as the net wealth to GDP ratio in the previous year multiplied by the difference between the nominal rate of return on net wealth and the nominal rate of GDP growth.
2. Implicit nominal rate of return deflated by the increase in the Consumers' Price Index.

Source: IMF (2008a) for assets, Central Bank of Iceland for liabilities, Statistics Iceland for all other data and OECD calculations.

24. The increase in assets provided collateral to support a marked increase in household debt, which rose from 169% of household disposable income before interest payments (household debt is serviced out of disposable income before debt repayments have been deducted, not out of the income that remains after debt servicing costs have been deducted) in 2003 to 201% in 2007 (Figure 9). This increase was large by international comparison, although it was exceeded in a number of other OECD countries. The level

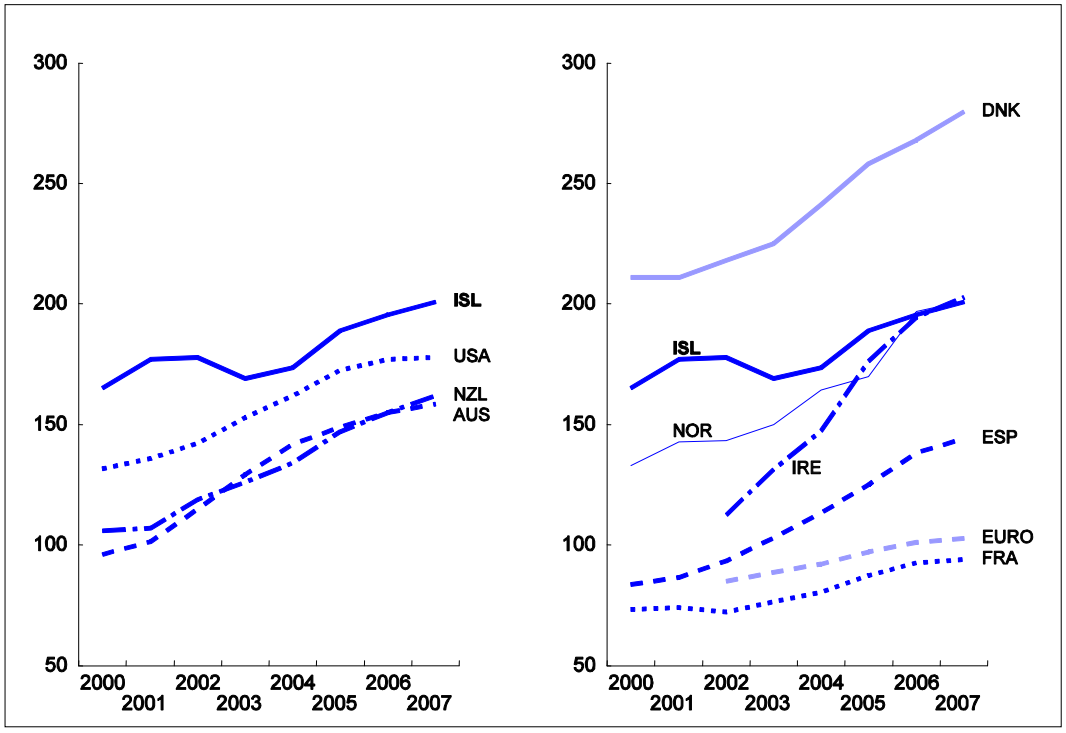
9. Pension fund assets comprise approximately one third of total household assets. Pension funds' share of equities in total assets in turn was approximately one third over this period, indicating that households' indirect holdings of equities through pension funds represented about one ninth of their total assets; approximately 40% of pension funds' equities were domestic. Households' other holdings of equities amounted to about 10% of total assets.

reached was on a par with that in Ireland and Norway and only exceeded in Denmark amongst OECD countries.

25. This increase in household debt was in line with that in household assets, leaving financial leverage (total assets divided by net wealth) unchanged at around 1.4 in 2007 (Figure 10). This leverage ratio is higher than in other OECD countries for which such data are available. Indeed, the riskiness of Icelandic households' balance sheets is even greater than indicated by these data because a substantial part (one third in 2007) of assets is in pension funds, which would be difficult for households to access to repay creditors if necessary. Such illiquid assets form a smaller share of household assets in most other countries, where there is less reliance on pension funds for retirement income. The risk of high financial leverage based on inflated asset values is that when they fall, households lose so much net wealth that they have to cut consumption back sharply to bring it into line with the lower expected level of lifetime income. They may even be constrained to reduce consumption expenditure by more than desired owing to reduced access to credit following their loss of net wealth (*i.e.*, collateral).

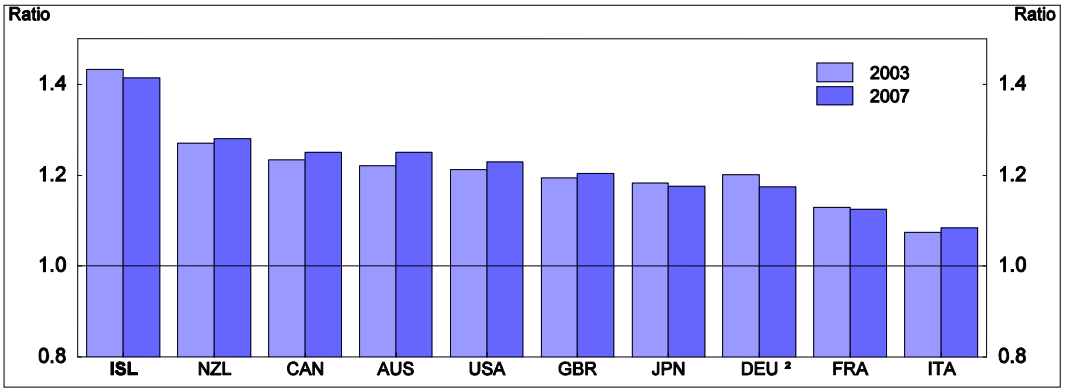
Figure 9. Household debt

As a percentage of disposable income before interest payments



Source: Statistics Iceland; Reserve Bank of New Zealand and OECD Economic Outlook database.

Figure 10. Financial leverage of the household sector[1]



1. Financial leverage is defined as total assets divided by net wealth.

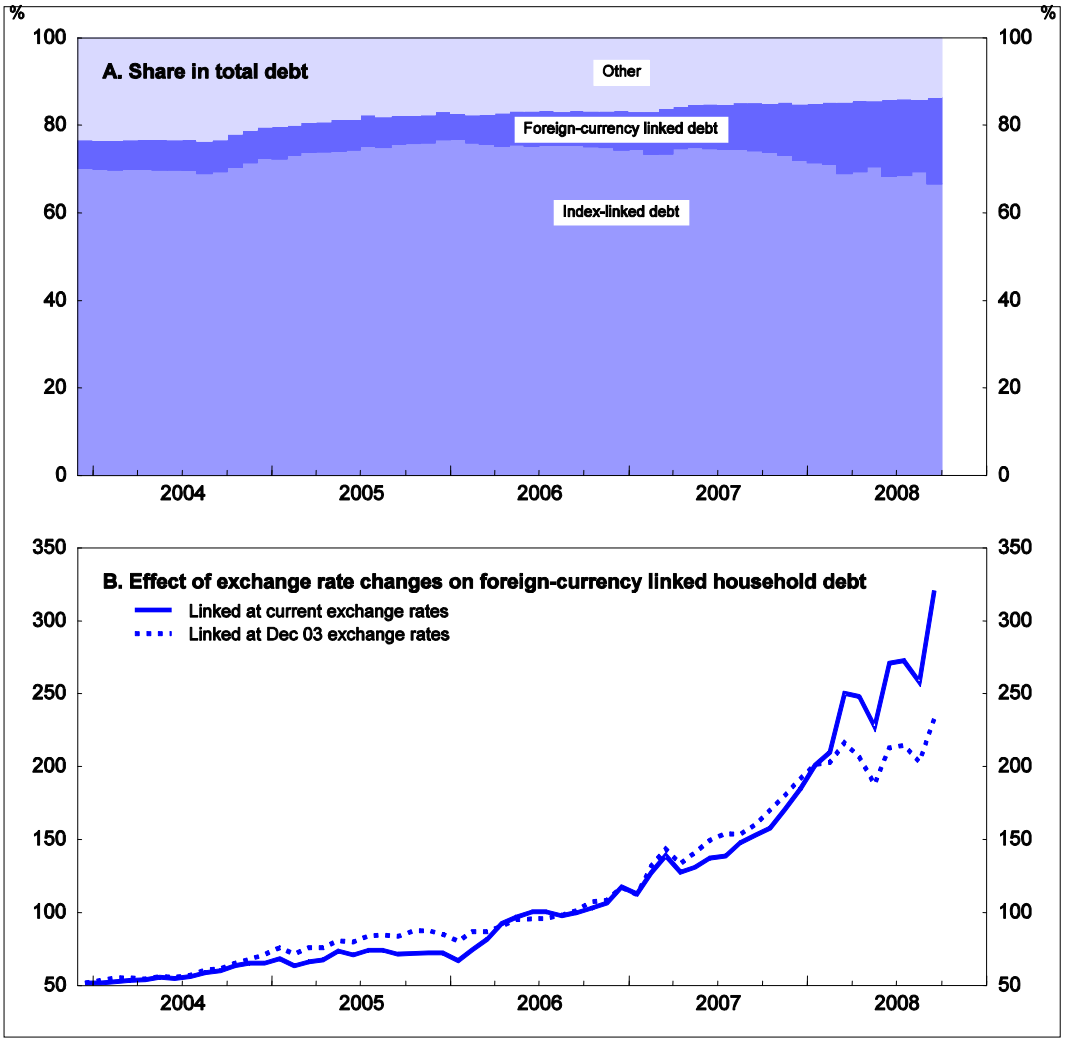
2. 2006.

Source: Central Bank of Iceland; Reserve Bank of Australia, Reserve Bank of New Zealand; OECD Economic Outlook database.

26. An unfortunate aspect of the banks' drive for market share in household lending is that they promoted foreign currency lending – mostly in Swiss Francs and Japanese Yen –, even though few households had offsetting foreign-currency assets or sources of income. The banks did this to gain an apparent competitive advantage with unsuspecting households against the Housing Finance Fund (HFF), which benefited from a government guarantee but continued to offer mainly domestic currency loans (indexed to the CPI). The share of foreign currency debt in household debt doubled to 14% over the two years to early 2008 (Figure 11). [10] It went on to reach 20% of household debt by September 2008, mostly owing to exchange rate depreciation, highlighting the dangers of such borrowing for households.

10. This analysis is based on data for the DMBs and Miscellaneous Credit Undertakings, the most important of which is the Housing Finance Fund (HFF). These two groups of institutions accounted for 86% of household borrowing from the credit system at the end of 2007.

Figure 11. Composition of household debt



Source: Central Bank of Iceland.

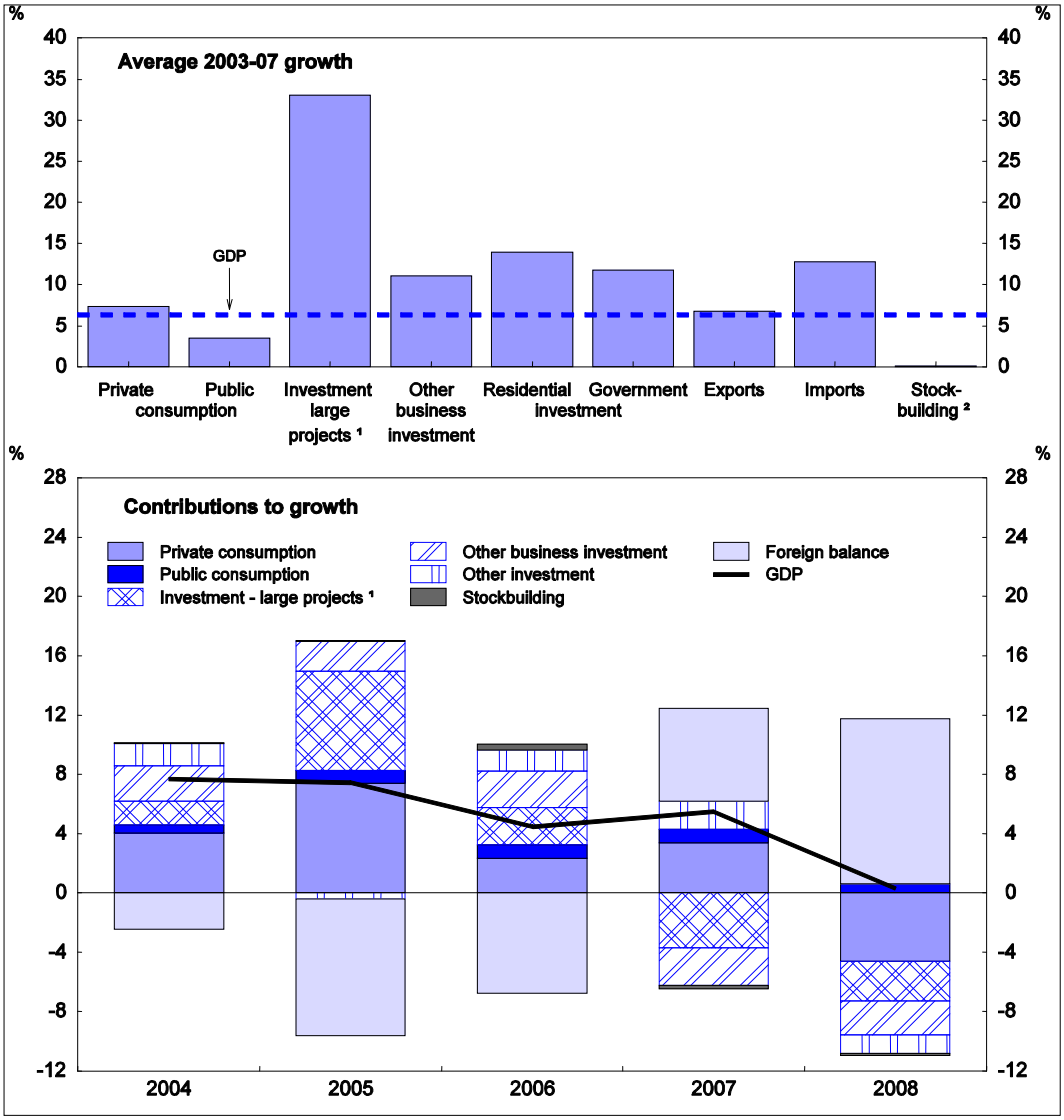
An unsustainable, domestic-demand led economic boom developed

Economic activity boomed

27. Economic growth rose to an annual average rate of 6.3% over the four years to 2007, well above the rates recorded in previous economic recoveries (3.7% over 1985-89; 5.0% over 1995-99), despite the fact that output was not further below potential in 2003 (the output gap was -1.6 % of potential GDP) than in 1985 or 1995, when the output gaps were -1.7% and -3.4% of potential GDP, respectively, according to OECD estimates. The surge in economic growth was led by an investment boom (Figure 12). Business investment soared, growing at an annual average rate of 19% over 2003-07. The most dynamic element of business investment was the large-scale projects in aluminium smelting and the associated expansion in electricity generation capacity. These projects reached up to 50% of business investment in some years. But other business investment also recorded very high growth as did government investment. Residential construction investment also grew strongly, as occurred in other countries with housing market booms. It reached a peak of 7% of GDP, well above the historical average but only slightly higher than the OECD average at this time and well below the shares of GDP reached in Ireland (13%) and Spain (9%). Private consumption expenditure grew at a slightly faster rate than GDP over this period, being buoyed by strong

growth in household disposable income. Indeed, the saving rate actually rose, albeit remaining negative, although caution is required in interpreting these data as there is not a complete household account in Iceland's National Accounts. Overall, the increase in domestic demand exceeded that in output as imports grew faster than exports. The OECD estimates that the output gap increased to 3.5% of potential GDP by 2007.

Figure 12. Real GDP growth



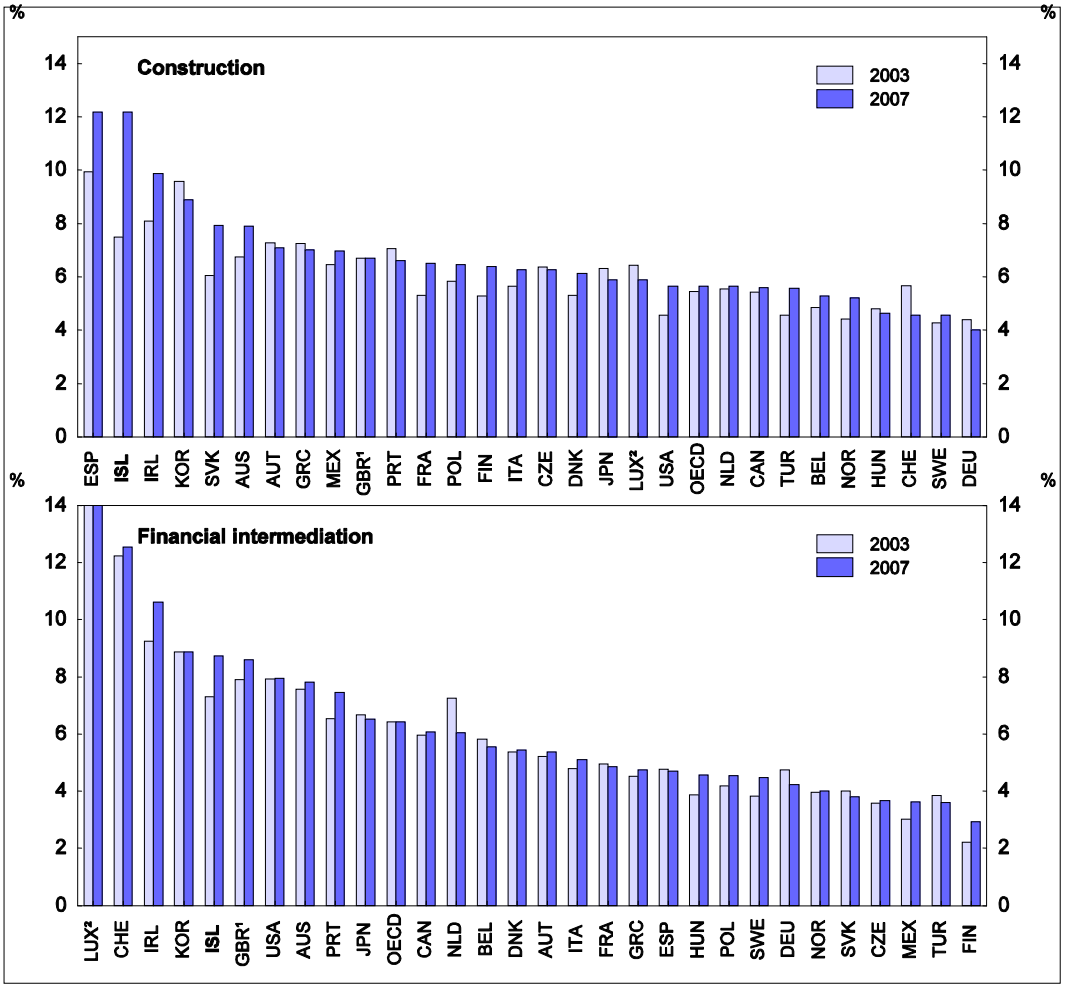
1. Ministry of Finance estimates.
2. Contribution to real GDP growth.

Source: OECD, National Accounts.

28. Financial intermediation and construction were by far the fastest growing sectors in Iceland over the four years to 2007, growing at annual average real rates of 19% and 14%, respectively. These sectors rose markedly as a share of nominal value added to levels that were the fifth and second highest among OECD countries, respectively (Figure 13). Drastic downsizing of the financial sector, which is now occurring, could see the sector's share in value added shrink by up to 4-5 percentage points if it were to fall to the lowest levels observed in other OECD countries. The overall loss in value added would depend on the difference in productivity between the financial sector and the other sectors to which resources are

transferred. For example, if workers released from the financial sector had productivity only one half as high in the new sectors in which they work, the overall loss of value added from shrinking the financial sector could be about 2%. The high growth in the construction sector reflects the booms in both business and residential investment, with large project investment undoubtedly having played a big role. However, the sector's prospects for 2010-11 are more favourable as substantial increases in large project investment are expected.

Figure 13. Share of the construction and financial intermediation sectors in value-added



1. United Kingdom: 2003 and 2005.
2. For Luxembourg: 23.2 in 2003 and 27.3 in 2007.

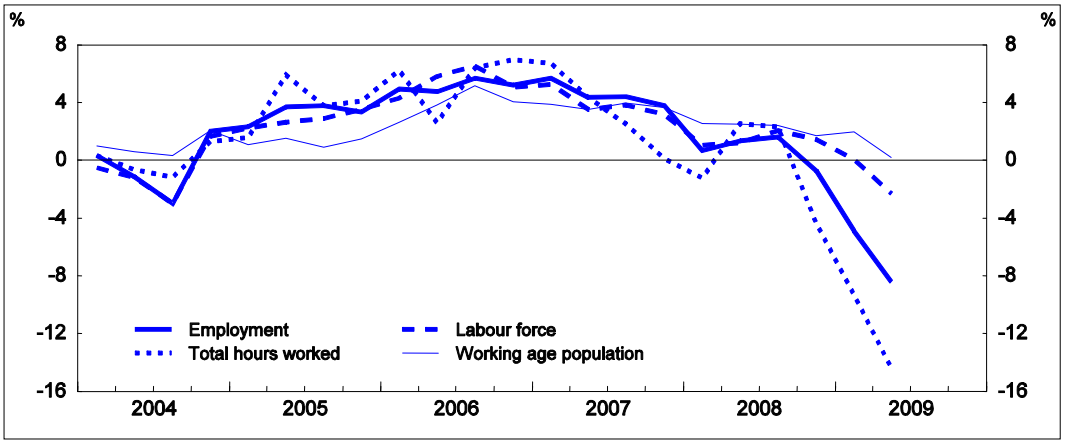
Source: Central Bank of Iceland; OECD National Accounts; Eurostat.

Overheating in the labour market was attenuated by high immigration

29. Growth in total hours worked soared to over 6% (year-on-year) in late 2005-early 2006 reflecting employment growth (Figure 14). Labour force growth tracked employment growth quite closely – the unemployment rate was already low in 2003, providing little scope for employment growth without labour force growth – until late 2007, when employment growth started to fall much faster than labour force growth. The phenomenal surge in labour force growth, in turn, was attributable to large inflows of immigrants, mainly from the countries that joined the EU in 2004 (notably, Poland). The unemployment rate fell from around 3% at the end of 2003 to a trough of about 2% in late 2007-early 2008, but has since increased sharply.

Figure 14. Growth in labour inputs

At annual rates

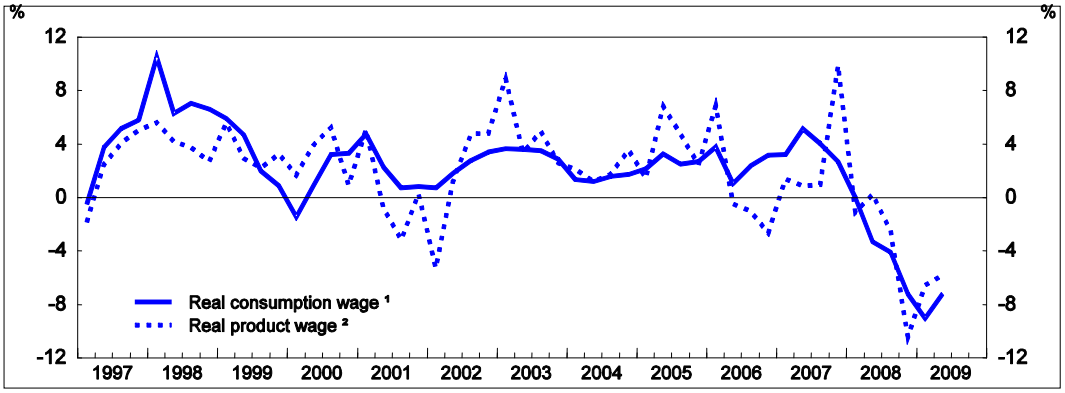


Source: Statistics Iceland.

30. Real wage rate (*i.e.* nominal wage rates deflated by the CPI) growth picked up over the business cycle expansion to a high of around 5% in 2007, comparable to the rates recorded at the previous business cycle peak (Figure 15). Private sector real wage rates grew more quickly than public sector wage rates over 2006-07, temporarily reversing the long-term trend (Figure 16). Growth in real product wage rates (*i.e.*, nominal hourly wage rates deflated by the GDP deflator) exceeded hourly labour productivity growth during the economic expansion, suggesting that the labour market was overheating; real wage rates fell in 2008, largely correcting this excess wage growth (Figure 17). Nominal wage growth picked up markedly during the expansion, reaching a peak of around 10% from the previous year in late 2006-early 2007 (Figure 18). These rates were slightly higher than in the previous business cycle despite the increase in real wage rates being similar (see Figure 15), pointing to the lack of progress made in reducing inflation.

Figure 15. Growth in real wage rates

At annual rates

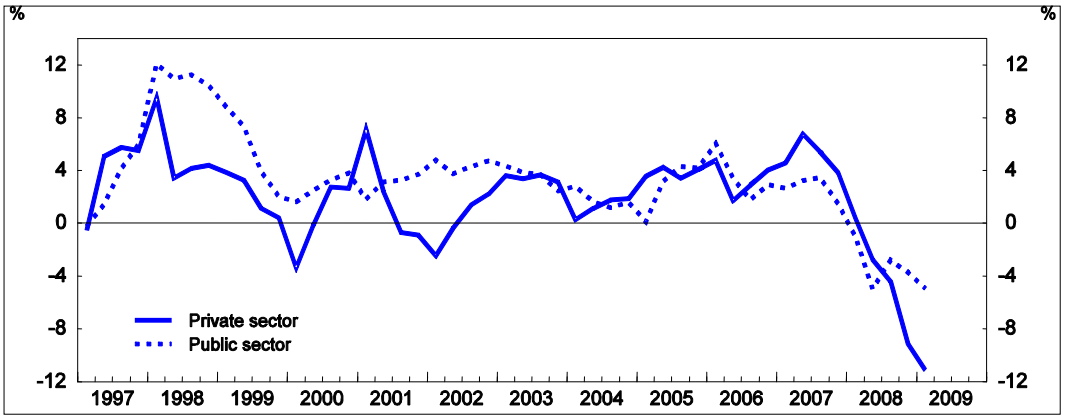


1. Change in the wage index deflated by the CPI.
2. Based on average for fixed hours earnings each month, deflated by the GDP deflator.

Source: Statistics Iceland.

Figure 16. Growth in real wage rates in the private and public sectors[1]

At annual rates

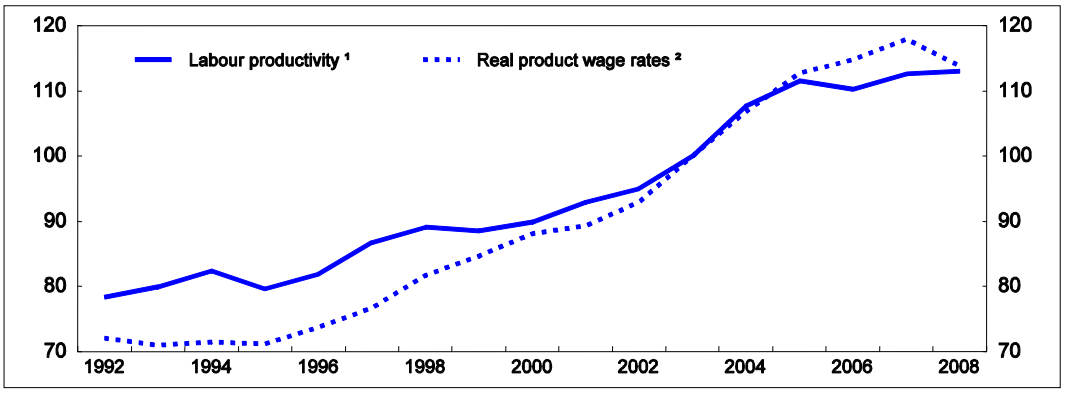


1. Change in the wage indices deflated by the CPI.

Source: Statistics Iceland.

Figure 17. Hourly labour productivity and real product wage rates

Index, 2003=100

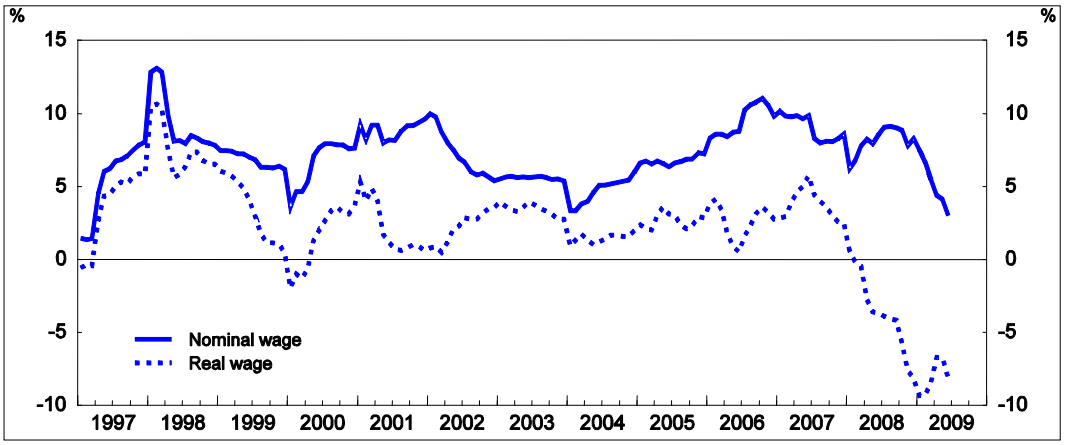


1. Real GDP divided by the product of total employment and average hours per week.
2. Compensation per hour worked deflated by the GDP deflator.

Source: Statistics Iceland.

Figure 18. Nominal and real wage growth

At annual rates

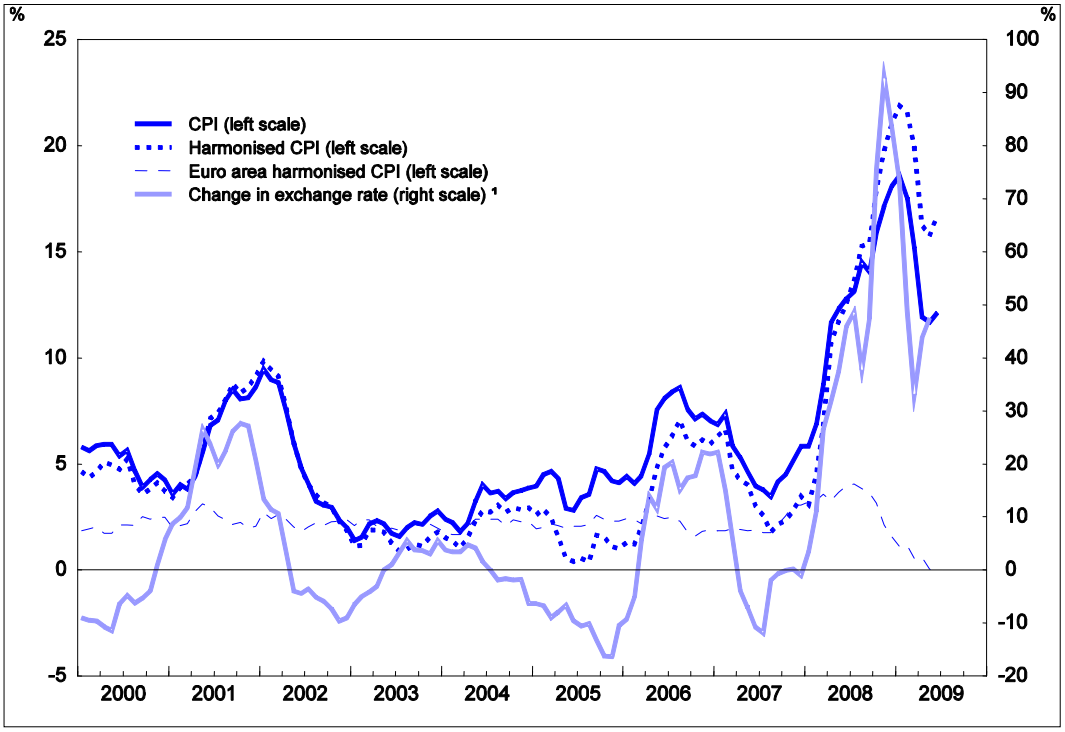


Source: Central Bank of Iceland.

Inflation rose and monetary policy credibility remained weak

31. Following the adoption of inflation targeting in 2001, CPI inflation accelerated from a cyclical low of around 2% over the first half of 2003 to 5.2% on average over the four years to the end of 2007, or about twice the official inflation target (Figure 19). This performance was a significant deterioration from the average annual rate of 3.5% over the previous eight years (*i.e.* to the December quarter of 2003). Inflation as measured by the harmonised consumer price index (HICP), which excludes owner-occupied housing costs, was just over 3%, somewhat higher than in the euro area, where inflation averaged 2.3%.

Figure 19. Inflation



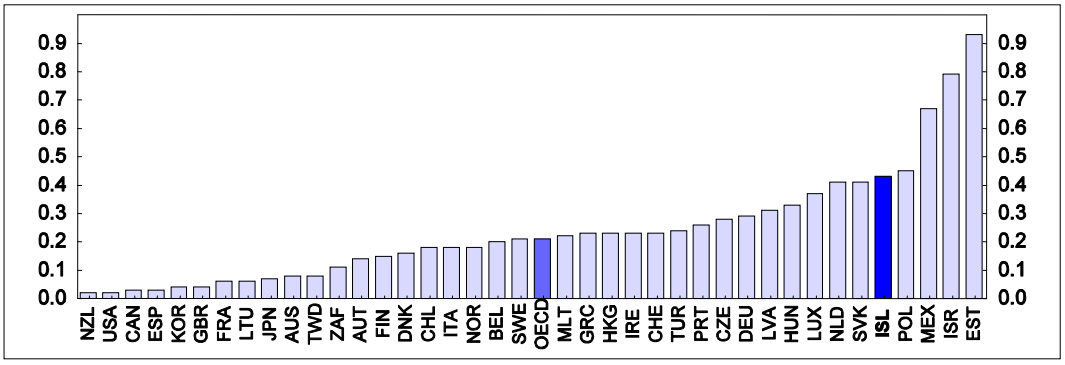
1. Króna per euro.

Source: Statistics Iceland; OECD, Analytical database.

32. Inflation remained much more volatile in Iceland over the four years to the end of 2007 than in the euro area. The standard deviation of the quarterly annualised rate of HICP inflation over the four years to the December quarter of 2007 was 3.0% in Iceland compared with 0.9% in the euro area. These figures were virtually unchanged from those for the eight years to the December quarter of 2003. Such volatility makes it difficult for households and firms to distinguish between changes in relative prices and in inflation, reducing the efficiency with which resources are allocated and hence the economy's productive potential. While inflation tends to be more volatile in very small open economies (VSOEs), such as Iceland, than in larger developed economies, volatility in Iceland has nevertheless been much higher than in other VSOEs. Pétursson (2008) finds that the most important factor explaining higher inflation volatility in Iceland is high exchange rate pass-through (Figure 20). This is indicative of weak monetary policy credibility amongst other things and hence poorly anchored inflation expectations (Mishkin, 2008), as is evident in the way that inflation expectations have generally followed the movements in the exchange rate (Figure 21). The decline in the break-even inflation rate on government bonds since November 2008 despite the exchange rate having weakened somewhat could be an encouraging sign of greater monetary policy credibility although some survey-based measures remain high. Nevertheless, the large differences in

measures of inflation expectations and their sensitivity to short-term economic news suggest that inflation expectations still need to be firmly anchored (Central Bank of Iceland, 2009).

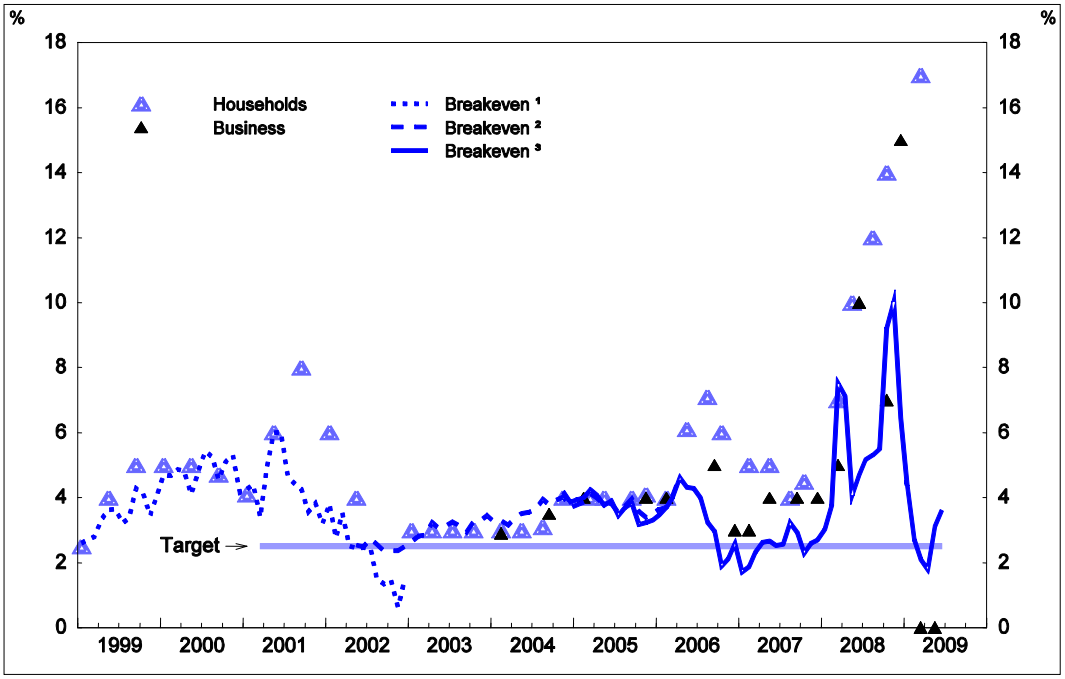
Figure 20. Exchange rate pass-through[1]



1. Exchange rate pass-through is estimated as the cumulative effect of a 15% exchange rate shock after 8 quarters in a VAR model using the generalised impulse response approach. The estimation period is 1985-2005, except: Austria (1998), Czech Republic (1993), Estonia (1996), Hungary (1987), Iceland (1988), Israel (1987), Latvia (1995), Malta (1994), Mexico (1989), Poland (1992), Portugal (1997), Slovakia (1994) and Turkey (1995).

Source: Pétursson (2008).

Figure 21. Inflation expectations



1. Spread between: RIKB 03 1010 and RIKS 03 0210 for January 2000 to April 2002.
2. Spread between: RIKB 13 0517 and RIKS 15 1001 for May 2002 to October 2004.
3. Spread between: RIKB 13 0517 and HFF 15 0914 since then.

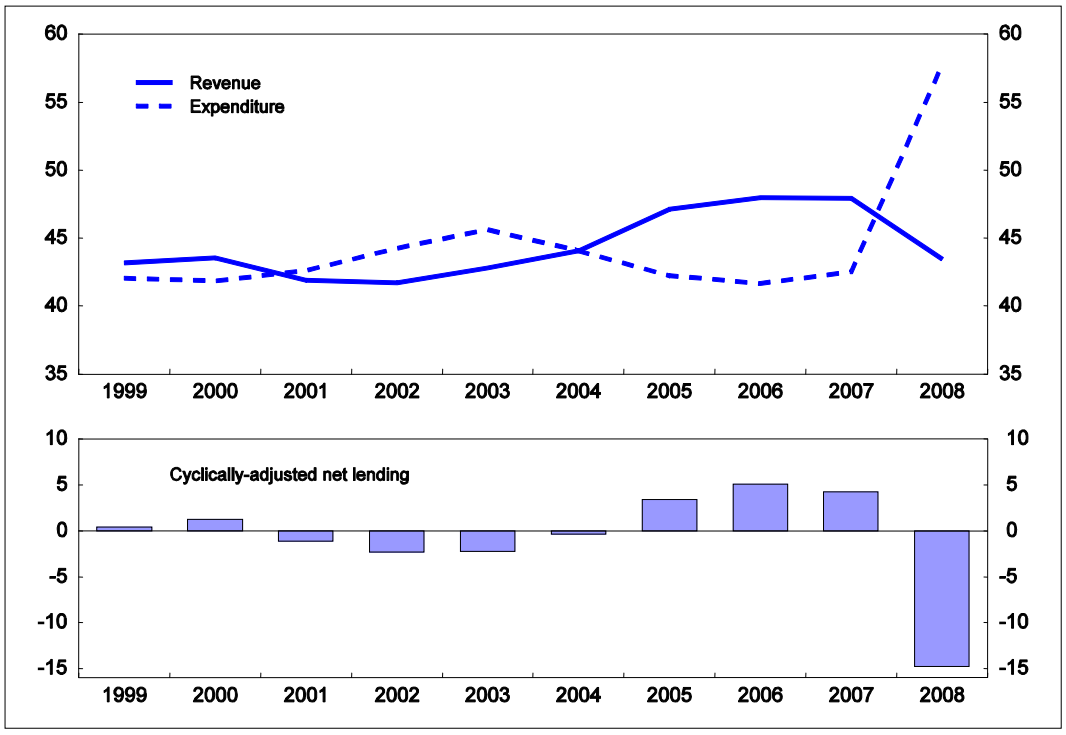
Source: Central Bank of Iceland.

Government undertook some budget consolidation and eliminated government net debt

33. General government net lending rose by some 8% of GDP over the five years to 2007, when it reached a surplus of 5½ per cent of GDP (Figure 22). Approximately two-thirds of this increase is attributable to higher revenues. Government property income, indirect taxes, and taxes on corporate profits all rose strongly as a share of GDP (Table 7), although taxes on corporate profits remained one of the lowest shares in GDP in the OECD – accordingly, the loss of corporate tax revenues from the collapse of the banking system cannot be too dramatic for the budget. Personal income taxes did not, however, rise as a share of GDP, despite the labour share of national income rising, as tax rates were cut. The largest contributions to the reduction in expenditure as a share of GDP were in compensation of employees and in social benefits. The OECD estimates that only one quarter of the increase in the budget balance over this period was cyclical, although there is considerable uncertainty about these estimates. Even though fiscal consolidation appears to have been considerable over this period, the government should have gone further, thereby providing a greater counterweight to the unsustainable boom in private domestic demand. The easing in fiscal policy in 2007, in particular, when the economy was well above potential and other macroeconomic imbalances in the economy were glaring, was inappropriate. Had greater fiscal consolidation been achieved, the increase in the current account deficit and appreciation of the real exchange rate would have been less than occurred (see below), reducing the economy's reliance on sustained foreign capital inflows and taking pressure off exporters. The structure of the economy would have remained closer to something that is sustainable.

Figure 22. General government revenue, expenditure and net lending

As per cent of GDP



Source: OECD, Economic Outlook database.

Table 7. Decomposition of general government revenue and expenditure

Per cent of GDP

	2003	2004	2005	2006	2007	2008
Total revenue	42.8	44.1	47.1	48.0	48.2	43.5
Total tax revenue	33.6	34.8	37.4	38.1	37.9	33.1
Taxes on income, profits and capital gains	16.0	16.1	17.6	18.3	18.7	17.8
of which						
Payable by individuals	13.9	13.9	14.2	14.0	13.9	
Payable by corporations	1.2	1.0	2.0	2.4	2.5	
Taxes on sales and services	14.8	15.7	16.7	17.2	16.2	12.5
of which						
General taxes on goods and services	9.7	10.4	11.1	11.3	10.6	
Excises	3.3	3.4	3.7	3.7	3.6	
Social contributions	3.1	3.1	3.2	3.3	3.2	2.9
Grants	0.1	0.1	0.1	0.1	0.1	0.1
Other revenue	6.0	6.1	6.4	6.4	7.2	7.4
of which						
Property income	2.1	2.1	2.6	2.9	3.6	3.9
Sales of goods and services	3.5	3.5	3.5	3.2	3.2	3.0
Total expenditure	45.6	44.1	42.2	41.7	42.5	44.6
Current expense	43.9	42.0	40.9	39.5	40.1	42.0
Compensation of employees	16.3	15.7	15.6	15.3	14.9	14.8
Use of goods and services	11.3	11.1	10.7	10.6	10.9	11.0
Consumption of fixed capital	1.9	1.9	1.8	1.8	1.8	1.9
Interest	2.7	2.4	2.2	2.2	2.6	3.2
Subsidies	1.9	1.8	2.0	1.7	1.8	1.8
Grants	0.1	0.1	0.1	0.2	0.2	0.2
Social benefits	7.1	6.8	6.2	5.7	5.8	6.6
Other expense	2.5	2.2	2.3	2.1	2.2	2.6
Net investment	1.7	2.0	1.3	2.1	2.5	2.7

Source: Statistics Iceland.

34. In view of the subsequent banking and economic crisis, it is fortunate that government net debt fell so much over this period, from 31% of GDP in 2003 to a small net asset position (0.8% of GDP) in 2007, although, as noted above, it would have been preferable to have gone further (Figure 23).

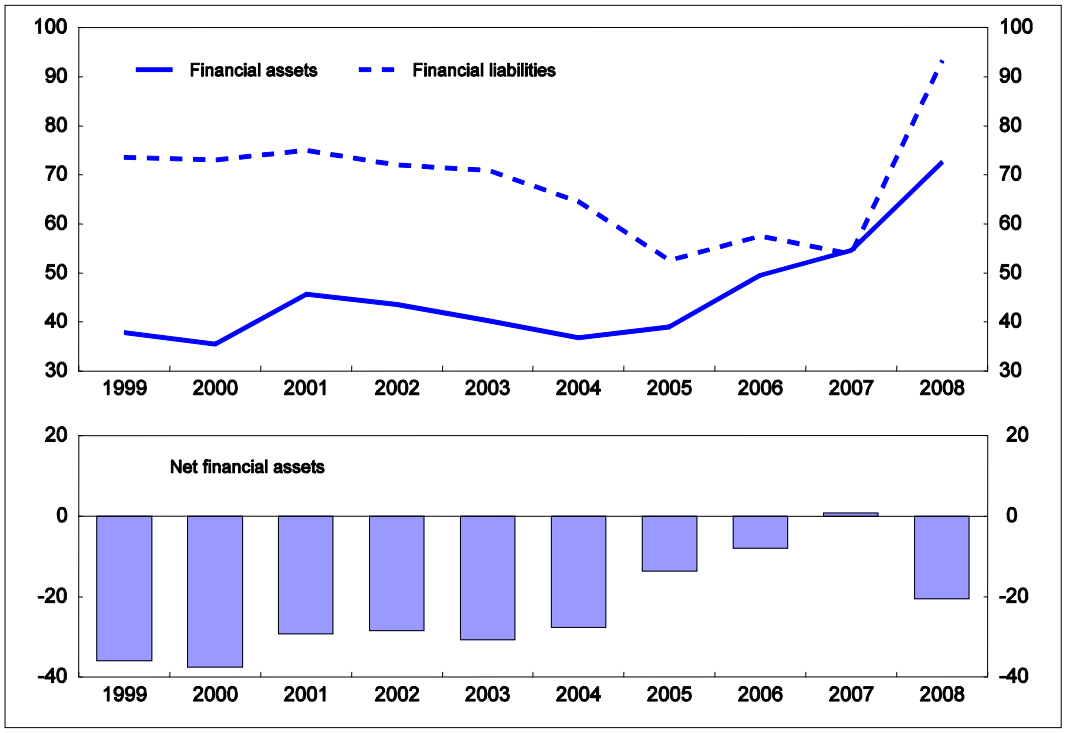
The current account deficit increased and the real exchange rate appreciated

35. The current account deficit (or equivalently, national net lending deficit) soared from 5% of GDP in 2003 to 25% of GDP in 2006 (Figure 24). From a net lending point of view, most of the increase in the deficit reflects a rise in investment, of which around one half was related to large-scale energy intensive projects. Abstracting from these projects, the increase in investment is estimated to account for approximately two thirds of the rise in the adjusted deficit, from 2% of GDP in 2003 to 16% of GDP in 2006. Even abstracting from the large-scale projects, investment was higher than during the previous expansion and considerably greater than during the previous two decades. Saving fell somewhat more than in the previous upturn and was noticeably lower than before the mid-1990s. National net lending rose to minus 16% in 2007, mainly reflecting a decline in investment (large-scale project investment alone fell by 4% of GDP). In light of the improvement in government net lending in recent years, the deterioration in

national net lending reflects an even larger fall in net lending of the private sector: such net lending fell by almost 20% of GDP between 2003 and 2007, to minus 21.5% of GDP.

Figure 23. General government debt

As per cent of GDP



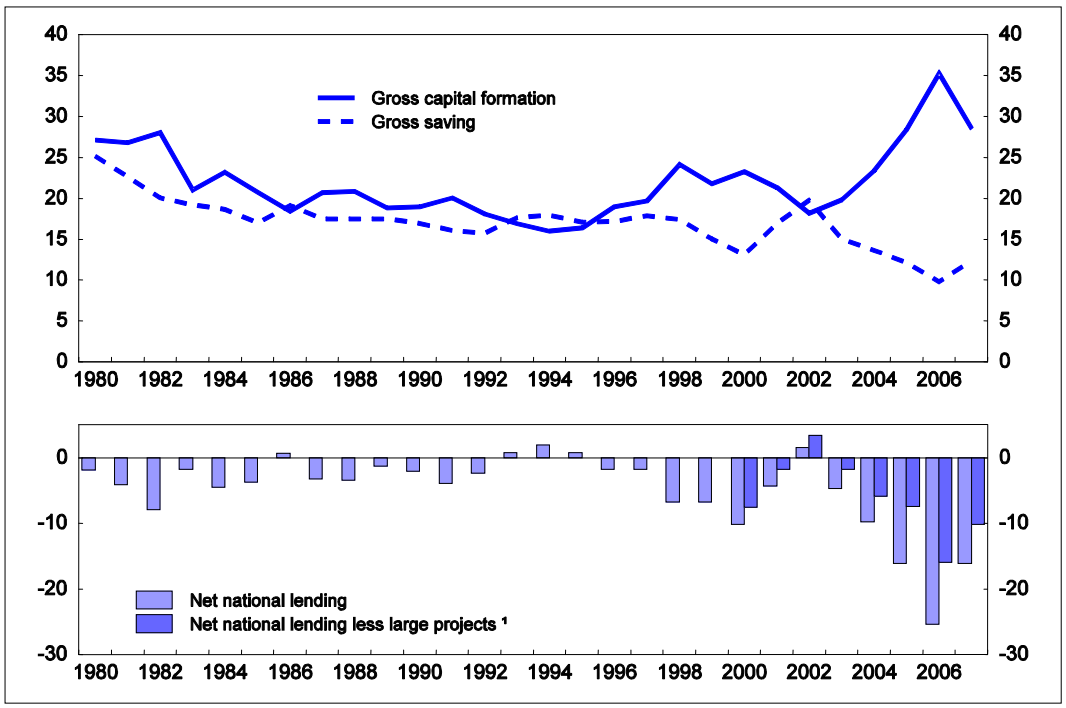
Source: Statistics Iceland.

36. Most of the increase in the current account deficit from 2003 to 2007 reflected a growing deficit on goods and services (Figure 25). There was, however, also a significant increase in the deficit on capital factor income, which doubled to 5% of GDP over this period. This increase reflects the growing dividends and reinvested earnings on non-residents' investments in Iceland, notably in large-scale energy related projects; Iceland residents' capital income net of interest payments to non-residents rose by about 3% of GDP over this period.

37. The real effective exchange rate (relative CPI-based) appreciated by 13% over the four years to 2007, taking it to 12% above the average value since 1980 (Figure 26). The IMF estimates that Iceland's real effective exchange rate was overvalued by 15-25% in the first half of 2007 (IMF, 2008a).

Figure 24. National gross investment, gross saving and net lending

As per cent of GDP

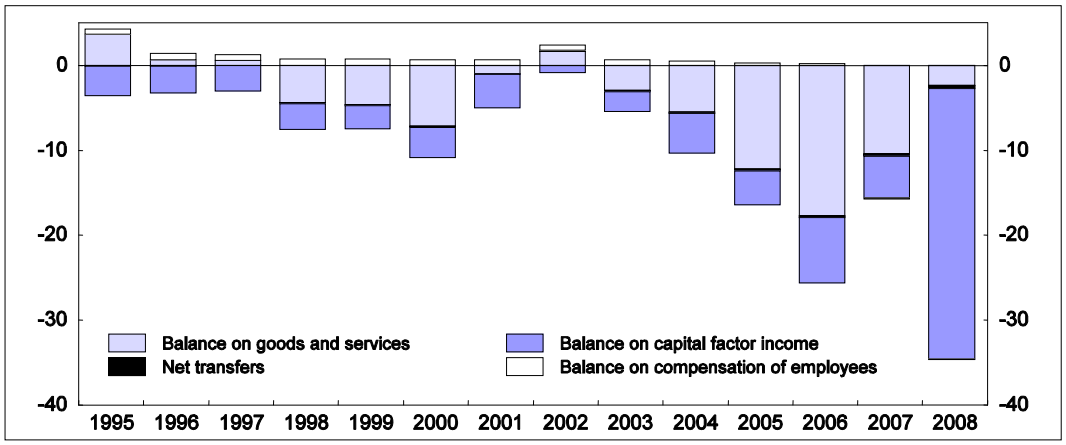


1. Estimates of the large projects by the Ministry of Finance.

Source: Statistics Iceland.

Figure 25. Contributions to the current account balance

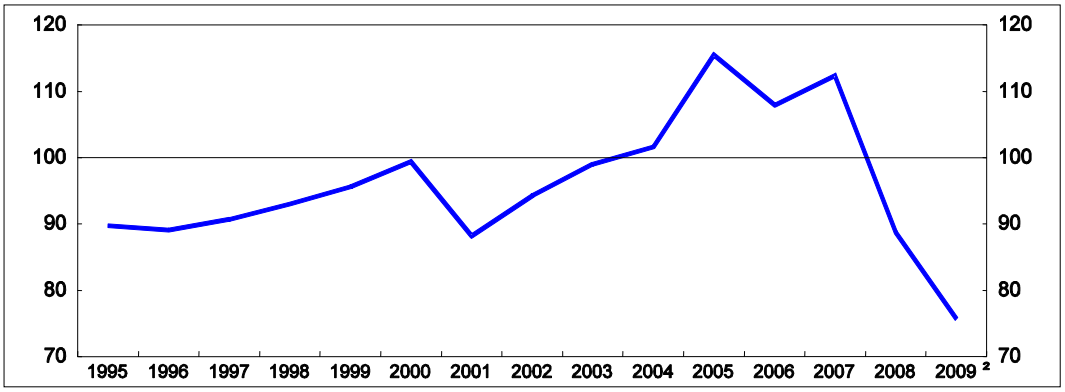
As per cent of GDP



Source: Central Bank of Iceland.

Figure 26. Real effective exchange rate[1]

Index, 1980-2008=100



1. Based on relative CPIs.
2. First half 2009 estimates.

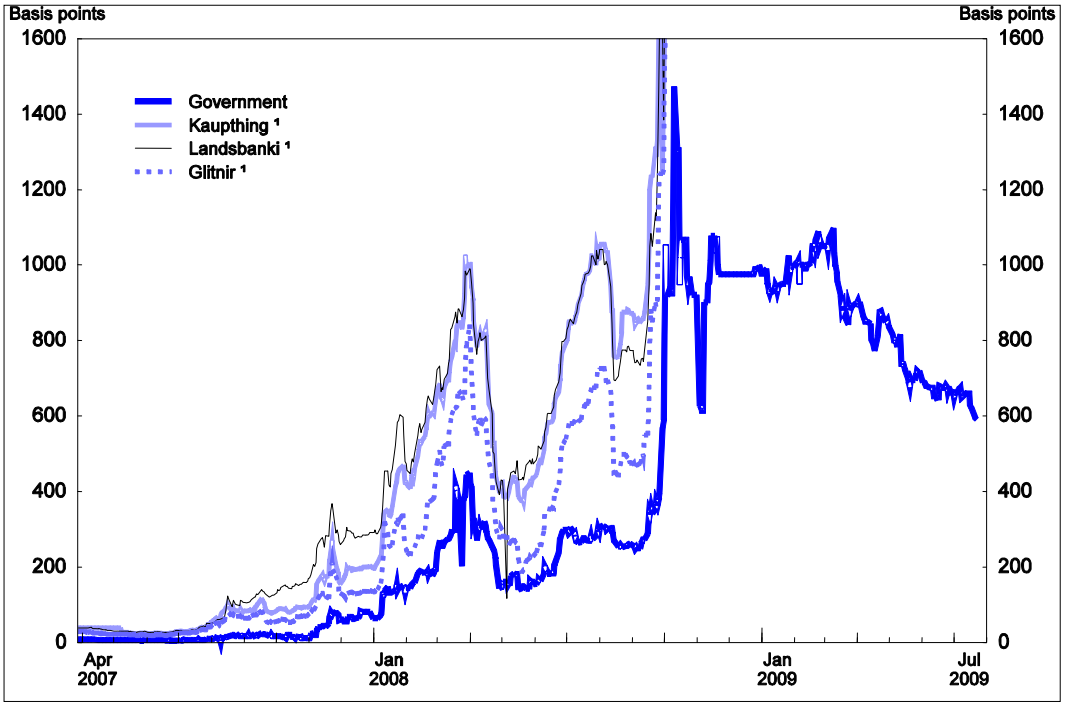
Source: OECD, Main Economic Indicators.

The banks were unable to resist the deterioration in global financial markets

38. Trouble started mounting for Iceland's banks as soon as the global financial crisis began in the summer of 2007. They were known to be highly exposed to global equity markets through the loans that they had made to Icelandic investment companies and related entities. There were concerns about their complex ownership structures and potential problems with large exposures and connected lending, about them being less closely supervised than other banks in the EU, and about their reliance on wholesale funding at a time when wholesale funding markets were freezing. In addition, there were serious doubts about the capacity of the Icelandic government to be able to rescue such large banks in the event that they got into difficulty. In the financial environment that was unfolding, banking without such potential backing was becoming extremely dangerous. Reflecting these concerns, Credit Default Swap (CDS) rates on Icelandic banks' debt, and hence their borrowing costs, rose by 200-300 basis points by the end of the year (Figure 27), more than for most banks in Europe or the United States. Despite these difficulties, Icelandic banks massively expanded foreign lending between July and December 2007 (see Figure 3), at a time when many banks were obliged to honour credit lines to companies or Special Purpose Vehicles (SPVs) that were having difficulty raising funds.

39. The global financial crisis took a turn for the worse in the first months of 2008, culminating in the US government-backed takeover of Bear Stearns by JP Morgan in March. Icelandic banks' CDS rates soared in this period, reaching 800-1 000 basis points in late March (see Figure 27). These rates were much higher than for most other banks in Europe or the United States and effectively meant that wholesale markets were closed to Icelandic banks. As they all had large amounts of debt maturing over 2009-2011, and Glitnir also had a large bond maturing in October 2008 (Figure 28), their rollover risk had become acute.

Figure 27. Credit default swap (CDS) rates

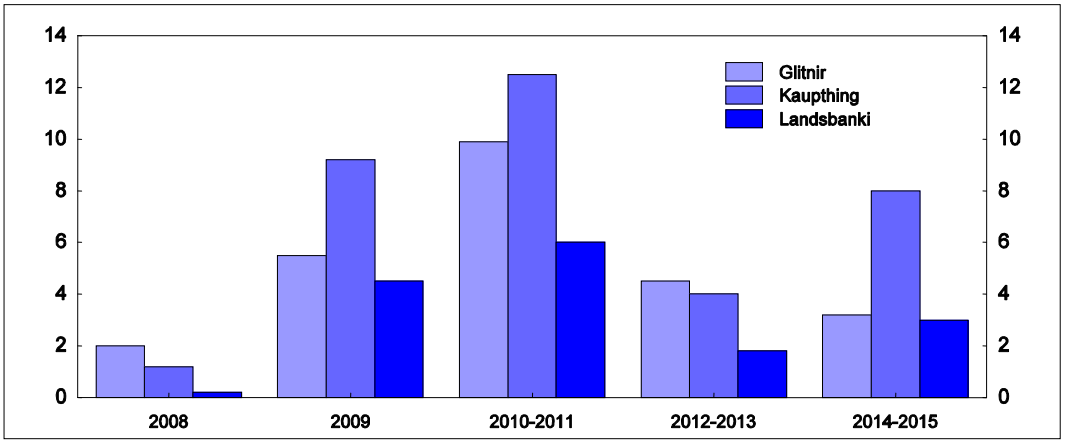


1. CDS rates reached 2 872.5, 2 579.4 and 4 840.6 basis points for Kaupthing, Landsbanki and Glitnir, respectively, in early October when the banks were placed in receivership.

Source: Datastream and Bloomberg.

Figure 28. Debt distribution of financial institutions

USD, million



Source: Central Bank of Iceland.

40. The Icelandic banks therefore turned to the CBI and ECB discount windows for funding on a large scale. The ECB became very concerned about the relatively large amounts that the Icelandic banks were borrowing from the system through the Central Bank of Luxembourg and about the quality of the collateral offered.[11] A significant part of the collateral offered by the Icelanders consisted of claims against other Icelandic banks, so-called 'love letters'. Furthermore, on the domestic front, in their operations with

11. This and the next five paragraphs draw heavily on Jännäri (2009).

the CBI, the banks had used claims against each other or employed claims against Iceland's Icebank as collateral (*i.e.* they issued paper to Icebank, which issued its own paper to them, to be used as collateral for borrowing at the CBI)" (Jännäri, 2009, p. 18). The ECB and the Central Bank of Luxembourg required the use of such collateral to be scaled down, but two Icelandic banks subsequently exceeded the agreed limits.

41. At the same time, the UK Financial Services Authority (FSA) was becoming increasingly concerned about the large UK resident holding of deposits with Icesave, the UK branch of Landsbanki. The FSA held discussions with Landsbanki in February concerning its liquidity and in March initiated a plan to transfer Icesave accounts from branches to a UK subsidiary. Doing so would have brought Icesave under FSA supervision and would have transferred deposit guarantee liability from Iceland (Depositors' and Investors' Guarantee Fund, DIGF) to the United Kindom. In fact, the transfer was never realised because Landsbanki was unable to transfer assets from its Luxembourg subsidiary to the UK operation without breaching debt covenants and because it could not satisfy FSA rules on large exposure limits.

42. As tensions in global financial markets eased following the actions of the US authorities to avoid failure of systemically important institutions such as Bear Stearns, Icelandic banks' CDS rates fell back significantly but still remained high. The near-death experience of the Icelandic banks during the first months of 2008 underscored the need for stronger government backing for the system. To strengthen such support, Parliament approved legislation empowering the government to borrow up to ISK 500 billion to bolster the reserves of the CBI. However, the authorities soon discovered that they could not borrow at reasonable rates – the CDS on government debt was 200-300 basis points – and in the end borrowed little.

43. Following the collapse of Lehman Brothers in mid-September, global financial markets deteriorated by more than at any time since the 1930s. The sale of a subsidiary that Glitnir had planned to use to finance the repayment of the bond maturing in October fell through and, with no other private funding possible, the bank was facing default. It requested help from the government, which agreed to pay € 600 million for a 75% stake in the bank. The value of Glitnir shares crashed, exposing Landsbanki to large losses as it had accepted large amounts Glitnir shares as collateral for loans extended to Glitnir's owners.

44. The UK FSA was very concerned about Icesave accounts, from which heavy withdrawals were occurring. On Friday 3 October, it required 200 million pounds be paid to an account at the Bank of England by Monday 6 October to meet further outflows from these accounts. The ECB also asked the Icelandic banks to reduce their debts with it. The Ministry of Business Affairs (MoBA) sent a letter to the UK authorities stating that the Icelandic government stood ready to support the DIGF, so that it would be able to meet the minimum compensation amounts stipulated by the EU Deposit Guarantee Schemes Directive in the event of the failure of Landsbanki. The government and the CBI refused Landsbanki's request to lend it 200 million pounds. They did, however, agree to lend Kaupthing € 500 million as it was able to post better quality collateral and was judged to have a greater chance of survival.

45. Parliament passed emergency legislation on Monday 6 October, allowing the FME to intervene in the banks' operations and take them over; this legislation had been under preparation since the spring. The next day, the FME took control of Landsbanki and Glitnir. On the following day, the UK authorities froze assets relating to Landsbanki in the UK.[12] The FSA also determined on the same day that the Kaupthing subsidiary Kaupthing Singer Friedland (KSF) was in breach of liquidity regulations and prevented it from accepting further deposits and obtained a court order to place it into administration. Thereby Kaupthing was also effectively taken out of business and the FME took control of the bank and nominated a resolution committee on 9 October.

12. The UK authorities did so using the powers under the UK Anti-Terrorism, Crime and Security Act 2001. The freezing order was made under separate provisions from the anti-terrorist ones. These other provisions confer the power to freeze assets where the UK authorities believe action has been taken, or is likely to be taken, that is to the detriment of the UK economy (Jännäri, 2009).

46. The government partitioned the failed banks into new banks, which took over domestic deposits and loans booked through domestic branches, and old banks to be liquidated. The aim of making this split was to enable the domestic payments system to continue functioning, which occurred. The new banks are to compensate creditors of the old banks for any excess of assets over liabilities transferred. The government will recapitalise the new banks when the compensation instruments have been issued to the old banks.

Aftermath of the collapse of Iceland's main banks

Government had incurred substantial net debts as a direct result of the failure of the banks

47. Net government (and central bank) debt has increased as a direct result of the failure of the banks by around 13% of GDP. Most of this figure reflects funds advanced to the banks by the CBI and, to a much lesser extent, the Treasury. Following the failure of the banks, it transpired that the CBI had made substantial loans to banks through its discount window based on very weak collateral, as noted above. When the banks failed, the CBI was holding ISK 270 billion (18.4% of GDP) of this paper, since written down to ISK 95 billion. The Treasury also made such loans to the primary dealers (*i.e.* the banks that failed), resulting in further losses of ISK 17 billion (1.2% of GDP) and accounting for the remainder of the increase in net debt so far as a direct result of the failure of the banks. In addition, the government will incur debt to meet minimum EU deposit guarantee requirements on Landsbanki's Icesave accounts in the United Kingdom and the Netherlands. The UK and Netherlands governments reached an agreement with the Icelandic government in June 2009 under which they will lend ISK 630 billion (US$ 4.95 billion) to Iceland's DIGF at an annual interest rate of 5.5% to cover these obligations. The DIGF will not have to make repayments for seven years, but must pay off the loan within 15 years. The aim of this arrangement is to enable the receivers to sell Landsbanki assets in an orderly fashion, thereby maximising their value. Any loan repayments in excess of asset realisations will be paid by the Icelandic government. Assuming a 75% recovery ratio, the CBI estimates that the present value of the cost to the Icelandic government of meeting this obligation is ISK 240 billion (17% of estimated GDP in 2009). The government also fully guaranteed domestic deposits. It is uncertain how much this commitment will cost.

48. To avoid such losses in any future banking crisis, controls on the quality of collateral offered at the CBI's discount window will need to be strengthened and government authorisation obtained for such large use of the discount window that the CBI's solvency is threatened.

A Stand-By Arrangement was agreed with the IMF

49. In the wake of the crisis, the government sought an IMF Stand-By Arrangement (SBA) to help to build confidence in the recovery programme and to obtain necessary foreign currency funding at a reasonable cost – such borrowing in private international capital markets would have been prohibitively costly given high CDS rates on Iceland government debt (they were still around 900 basis points in spring 2009). The SBA, which was agreed in November 2008, foresees external financing of US$ 5.1 billion, of which US$ 2.1 billion comes from the IMF (40% was made available immediately and the balance is to be paid out in eight equal instalments subject to quarterly reviews) and the balance from other neighbouring countries, and lasts two years. In addition, the United Kingdom and the Netherlands agreed in principle to lend the Icelandic authorities the money needed for them to cover EU minimum deposit guarantees on Icesave accounts in these countries, with the terms of the loans being finally agreed in June 2009, as noted above. The SBA is in support of an economic policy programme that is aimed at addressing the following key challenges:

- *Prevent a further sharp depreciation of the króna to reduce the risk of adverse balance sheet effects*, which would harm the economy. This risk reflects the high leverage of the economy and

very high share of foreign-exchange denominated and inflation-indexed debt. To this end, monetary policy was tightened to make króna assets more attractive to hold and the capital controls introduced by the government in the wake of the crisis were maintained.

- *Ensure medium-term fiscal sustainability by launching a strong medium-term fiscal consolidation programme starting in 2010*. While the expansionary measures in the original 2009 budget had to be reversed, no consolidation measures were required in 2009 except insofar as the starting position deteriorated (by ISK 20 billion, 1.3% of GDP) from what was originally envisaged (mainly owing to higher unemployment benefit payments). To this end, personal income tax rates and various excise taxes have been increased in 2009, additional taxes have been introduced and government expenditure cut back (see De Michelis, 2009). Consolidation measures of around 3% of GDP per year are required over 2010-2013.

- *Develop a comprehensive bank restructuring strategy, including measures to ensure fair valuation of assets, maximise asset recovery, and strengthen supervisory practices.* Settling claims by depositors and other creditors in a fair, collaborative, and best-effort manner was considered to be essential to preserve Iceland's integration in the international financial system and to restore access to international capital markets.

Restoring the smooth functioning of the banking system will contribute to the success of the recovery programme

50. The new banks are not in a position to intermediate normally between lenders and borrowers: they have no capital and there is considerable uncertainty about the value of their assets and consequently of the compensation instruments that they must issue to the old banks to compensate creditors for any excess of assets over liabilities transferred to the new banks. Some of these problems should soon be resolved. The government reached agreement in July 2009 with the Resolution Committees of the old banks on the terms on which compensation agreements will be finalised, which is expected to occur by mid-August. It was conditionally agreed that the Resolution Committees of Glitnir and Kaupthing should have majority ownership of the new banks, which would involve these Committees capitalising Islandsbanki and New Kaupthing as part of the compensation agreement. The government and the Resolution Committee of Old Landsbanki agreed to a further period to allow completion of due diligence by the Resolution Committee, its advisors and creditor representatives and the finalisation of the terms of a bond instrument to be issued by New Landsbanki in connection with compensation. This bond is also expected to be issued in mid-August. The government will recapitalise the new banks as soon as the compensation agreements have been finalised. Recapitalisation will be achieved by the issue of new government bonds to the new banks. Each bank will be prudently capitalised with a core tier 1 ratio of approximately 12%. In aggregate, it is expected that the total capitalisation will amount to approximately ISK 270 billion (19% of estimated GDP in 2009). In the event that both Glitnir and Kaupthing complete their share subscription agreements as described above, this amount would be reduced to approximately ISK 200 billion. These levels of capital commitment are significantly lower than the estimated commitment of ISK 385 billion at the time of the original transfer of assets and liabilities to the new banks in October 2008, leading to a lower fiscal cost and impact on gross state debt than originally envisaged.

51. While the banks' assets have been substantially written down based on the valuations used to reach the final compensation agreements and the banks themselves will have relatively high capitalisation levels in recognition of the considerable uncertainty over the value of their assets, it may still be necessary to move bad assets into an asset management company to reduce uncertainty about the strength of the banks' balance sheets. The banks' physical operations (personnel and branch networks) also remain oversized for the Icelandic market, reducing their profitability. The banks' owners would benefit from scaling back these operations, which could even entail mergers (provided that this does not undermine

competition in banking services). In this regard, it will be important that the government uses its ownership stakes in the banks to maximise the sustainable value of this investment rather to pursue other objectives (such as avoiding redundancies in the banking sector), which could stand in the way of the necessary bank consolidation. All of these measures would help to prepare the banks for full privatisation within the next few years.

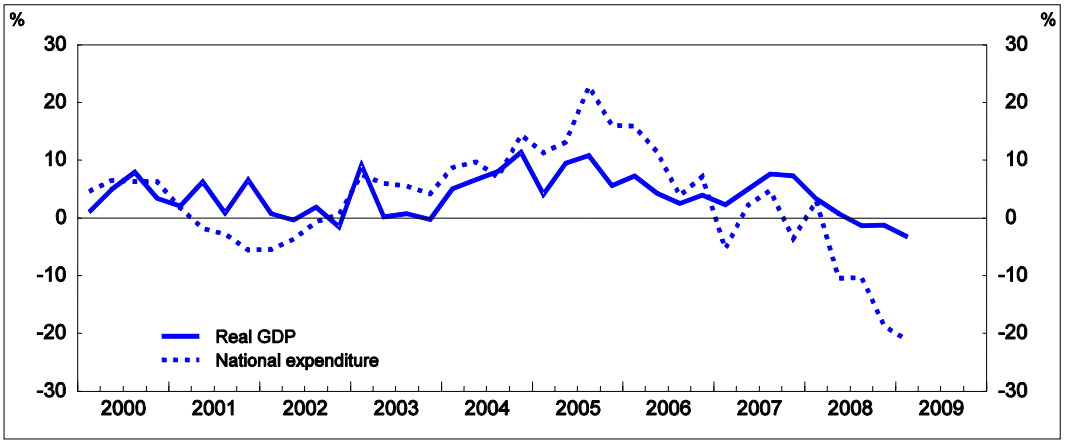
52. A major problem with the structure of the new banks is that they have sizeable foreign currency denominated assets (although they will be considerably reduced once the full extent of write-downs to the investment groups is known), but almost no foreign currency liabilities. This exposes them to exchange rate risk and imposes negative carry costs (króna interest rates being significantly higher than foreign currency rates), albeit diminishing as domestic interest rates decline. These costs add to the adjustment burden required to respect the SBA fiscal consolidation programme. Once the exchange controls on capital movements are removed, however, the banks will be able to restore a hedged foreign-currency position and thereby eliminate the negative carry. It would be unfortunate if the banks were to seek to eliminate their foreign-currency risk exposure, which is likely to be short lived, by forcing clients such as exporters with hedged foreign-currency loans into króna loans, thereby creating a new foreign-currency exposure. Given that the real value of the króna appears to be well below its equilibrium value, such a foreign currency exposure could well end up inflicting heavy losses on exporters.

The economy plunged into a deep recession but is expected to begin to recover in 2010

53. Adjustment to the deteriorating economic environment began before the banks failed. Domestic demand growth, which had already fallen to moderate rates in 2007, plunged from the second quarter of 2008 (Figure 29). This followed the serious aggravation of the global financial crisis in the first quarter of 2008, culminating with the US government-backed rescue of Bear Stearns in March 2008. These events had curtailed access of the Icelandic banks to global capital markets. All private components of domestic demand were shrinking in year-on-year terms from the second quarter of 2008, with business investment and residential investment leading the way. GDP growth, however, declined less than domestic demand growth reflecting buoyant exports and falling imports.

Figure 29. Growth in domestic demand and GDP

At annual rates



Source: Central Bank of Iceland.

54. Labour-market adjustment lagged the economic downturn, as typically occurs. Employment growth slowed markedly, but was still relatively high in the third quarter of 2008 (see Figure 14). Together with a significant slowdown in immigration, this contained the increase in unemployment, from 2% in the third quarter of 2007 to 2½ per cent one year later. Nevertheless, real wage growth slowed markedly (see Figure 15), reflecting a surge in inflation that was not compensated in nominal wage rates (see Figure 18).

55. Inflation soared to 13.9% in the third quarter of 2008 from 3.8% one year earlier (see Figure 19). This increase resulted from the large depreciation of the króna exchange rate (29%) that had occurred since the global financial crisis began in the third quarter of 2007. As noted above, exchange rate pass-through into the domestic inflation rate is high in Iceland, reflecting low monetary policy credibility, amongst other things.

56. Following the failure of the banks, the contraction in all components of domestic demand deepened markedly. Consumers slashed spending in the face of falling real incomes, a large loss of wealth and an urgent need to deleverage. Residential investment fell sharply and firms drastically pruned general business investment expenditure in the face of a bleak economic outlook, the breakdown of financial intermediation, and the need to deleverage. Imports fell to such an extent that the trade balance jumped to close to zero; the current account deficit, however, widened to a record level (35% of GDP) owing to huge foreign losses by Icelandic investment companies, which resulted in a very large factor income deficit (32% of GDP). Deep cuts in employment and working time were made, pushing up the unemployment rate to 7.1% by the first quarter of 2009. Consumer price inflation increased further to 18.6% in the wake of the additional currency depreciation (the króna effective exchange rate depreciated by a further 27% between the third quarter of 2008 and the second quarter of 2009) associated with the failure of the banks, but had fallen to 12.2% by June 2009 as the effects of the depreciation started to dissipate, the fall in housing prices intensified (housing prices enter the CPI directly in Iceland through the user cost of owner-occupied housing services component), and the increasingly depressed economic conditions weighed on firms' pricing power. Wages have adjusted quickly to the crisis, falling by 6¾ per cent in real terms in the year to May 2009.

57. On the basis of macroeconomic policies that are consistent with the IMF programme, and assuming that the smooth functioning of the banking sector is restored by the end of the year, the OECD projects a deep recession this year, with GDP shrinking by around 7%, and a gradual recovery beginning next year as large energy-related projects get underway (Table 8). The unemployment rate should rise to a peak of 10% in 2010 while inflation should fall to around 2½ per cent. A further improvement in the trade balance should bring the current account near balance in 2010, despite a large factor-income deficit.

58. Compared with the completed recessions in the other developed countries that have had big financial crises in recent decades – the "Big Five" financial crisis countries identified by Reinhart and Rogoff (2008) – the OECD estimated recession in Iceland is amongst the longest and is one of the deepest (Figure 30). The strength of the projected recovery from the trough is comparable to those in most of the other countries. Based on the experience of these countries and the scale of the drop in output from the peak, which is comparable to that which occurred in Finland in the early 1990s, it could take six or seven years for output in Iceland to recover to the peak reached in the third quarter of 2007.

Table 8. Short-term economic developments and prospects

	2005	2006	2007	2008	2009	2010
	Current prices ISK billion	Percentage changes, volume (2000 prices)				
Private consumption	610.6	3.9	5.6	-7.7	-16.2	-1.9
Government consumption	252.6	4.0	4.2	2.8	-2.2	-3.3
Gross fixed capital formation	291.3	21.7	-12.8	-21.8	-51.3	7.0
Final domestic demand	1 154.5	8.4	0.0	-9.0	-21.0	-0.9
Stockbuilding[1]	-0.9	1.1	-0.6	-0.4	1.0	0.1
Total domestic demand	1 153.7	9.4	-0.6	-9.3	-18.6	-0.8
Exports of goods and services	323.9	-4.9	7.7	7.1	-1.0	0.8
Imports of goods and services	451.3	10.4	-1.0	-18.0	-26.3	1.2
Net exports[1]	-127.4	-6.1	6.2	10.6	12.1	-0.1
GDP at market prices	1 026.3	4.5	5.5	0.3	-7.0	-0.8
GDP deflator		9.0	5.6	12.2	9.2	3.6
Memorandum items						
Consumer price index		6.7	5.1	12.7	10.8	2.4
Private consumption deflator		7.5	4.7	14.0	11.4	2.4
Unemployment rate		2.9	2.3	3.0	8.4	9.9
General government financial balance[2]		6.3	5.4	-14.3	-10.7	-7.2
Current account balance[2]		-25.0	-15.4	-34.6	-3.0	-1.1

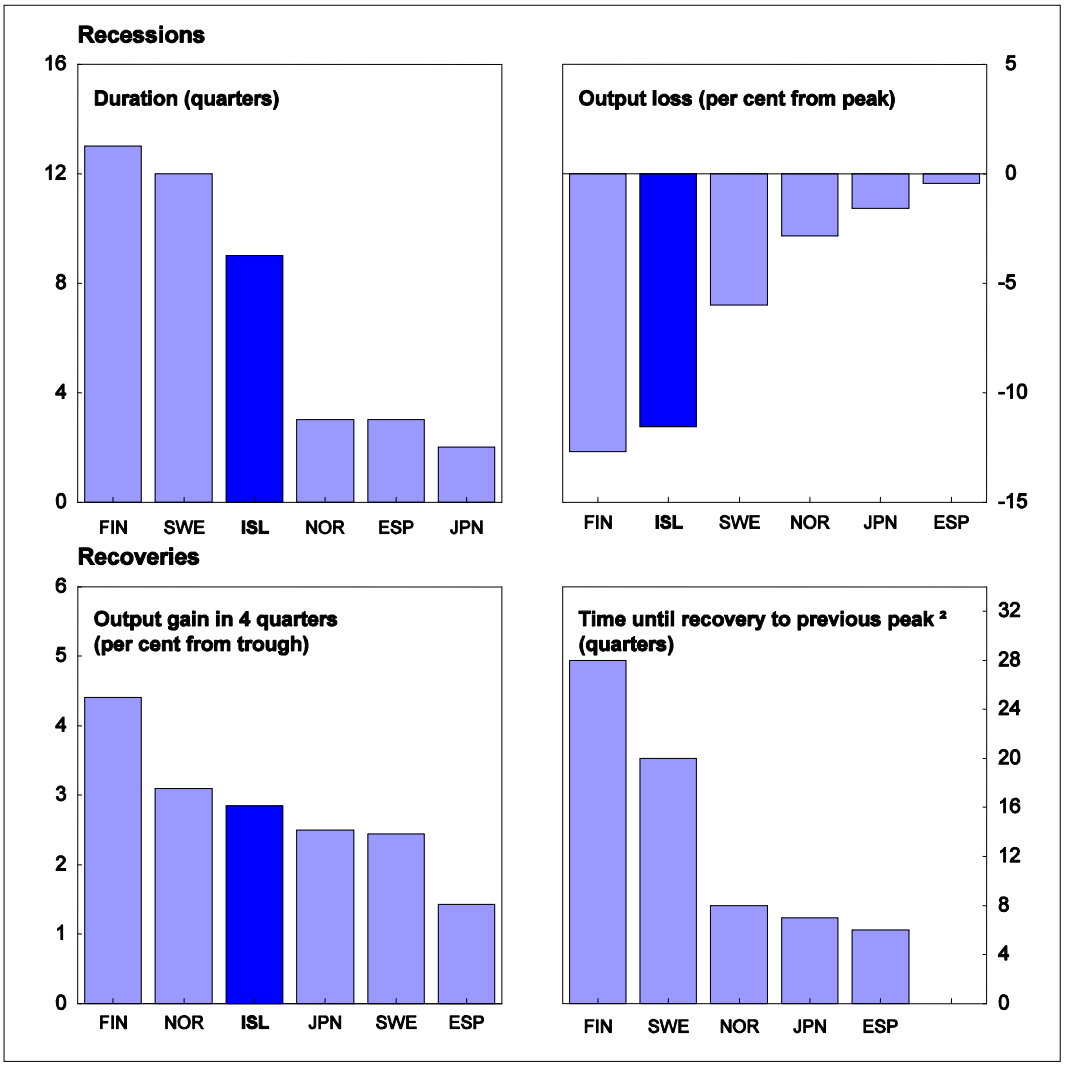
Note: National accounts are based on official chain-linked data. This introduces a discrepancy in the identity between real demand components and GDP. For further details see *OECD Economic Outlook* Sources and Methods *(http://www.oecd.org/eco/sources-and-methods).*

1. Contributions to changes in real GDP (percentage of real GDP in previous year), actual amount in the first column.

2. As a percentage of GDP.

Source: OECD Economic Outlook 85 database.

Figure 30. Recessions and recoveries: Iceland and the "Big Five" financial crisis countries[1]



1. The "Big Five" financial crisis in recent years indentified by Reinhart and Rogoff (2008) include Finland (1990-93), Japan (1993), Norway (1988), Spain (1978-79) and Sweden (1990-93).

2. The time to recovery to the previous peak for Iceland extends well beyond the OECD projections horizon, which presently ends in 2010 Q4. At this time, the OECD projects that around 20% of the drop from the peak will have been recovered.

Source: OECD, National Accounts.

Prudential supervision and regulation need to be strengthened

59. The global financial crisis has exposed weaknesses in prudential supervision and regulation in most countries. An important theme to emerge from studies of what went wrong is that the absence of effective macro-prudential supervision allowed major risks to the stability of the financial system to grow unchecked (Box 2 for definitions of macro- and micro–prudential supervision). In Iceland, these risks developed further than in other countries, which in the end proved fatal. Weaknesses in micro-prudential supervision have also been exposed, particularly in Iceland, which also need to be corrected.

Box 2. Macro- and micro-prudential supervision*

Macro-prudential supervision is aimed at limiting the distress of the financial system as a whole in order to protect the overall economy from significant losses in real output. While risks to the financial system can in principle arise from the failure of one financial institution alone if it is large enough, the much more important systemic global risk arises from a common exposure of many financial institutions to the same risk factors. Macro-prudential analysis must therefore pay particular attention to common or correlated shocks and to shocks to those parts of the financial system that trigger contagious knock-on or feedback effects.

Micro-prudential supervision, which has traditionally been the focus of attention of supervisors, aims to limit the distress of individual financial institutions, thus protecting the customers of the institution in question. By preventing the failure of individual financial institutions, micro-prudential supervision attempts to mitigate the risk of contagion and the subsequent negative externalities in term of confidence in the financial system.

* This box is based on the de Laroisière (Chair) (2009) report.

60. A key lesson from the global financial crisis is that macro-prudential supervision cannot be effective unless it can somehow impact on supervision at the micro-level (de Larosière Group, 2009). Iceland had a financial stability regulator, the CBI, but its role was limited to issuing warnings about threats to financial stability. There was no legal basis for translating these warnings into changes in micro-prudential policy settings to restrain bank behaviour that was putting financial stability at risk.

61. The report by the former Finnish bank supervisor, Mr Jännäri, which was commissioned by the authorities to recommend improvements in prudential regulation and supervision, contains recommendations concerning both macro- and micro-prudential supervision. The major recommendations are reproduced in Box 3.

Box 3. Major recommendations of the Jännäri Report on prudential regulation and supervision

1. Decrease the number of ministries that have a hand in financial legislation or that are otherwise involved in the financial markets.
2. Merge the CBI and the FME, or at least bring them under the same administrative umbrella (as in Finland and Ireland).
3. Give more discretionary powers to the FME and encourage it to use its powers more forcefully.
4. Create a national credit registry at the FME to diminish credit risks in the system and to provide a better overview of large exposures at the national level.
5. Lay down tougher rules and, subsequently, apply strict practice on large exposures, connected lending and quality of owners, using discretionary best judgment when necessary.
6. Conduct more on-site inspections to verify off-site supervision and reports, particularly on credit risk, liquidity risk and foreign exchange risk.
7. Review and improve the deposit guarantee system, closely following the developments with the EU.
8. Participate actively in international cooperation on financial regulation and supervision, particularly within the EEA and EU.

Macro-prudential supervision needs to impact micro-prudential supervision to contain the build-up of systemic risk

Common exposure of the main banks to the same risk factors

62. The three main banks were all pursuing the same core expansion strategy – borrowing abroad, primarily in wholesale markets, to finance highly-leveraged Icelandic investment groups' purchases of equity assets abroad (primarily through outward foreign direct investment). In most cases, collateral for these loans was shares in the companies bought. This strategy indirectly exposed the banks to equity market risk – when global equity markets deteriorated sharply following the failure of Lehman Brothers, these investment groups had become insolvent and the value of any collateral that they had posted was greatly diminished, resulting in large credit losses for the banks. The fact that the banks had mainly borrowed in wholesale markets added to their woes because such financing was unavailable following the failure of Lehman Brothers. The banks had also grown to be too big for the Icelandic government to rescue. Banking under these conditions became very risky during the global financial crisis.

63. The banks also greatly expanded lending to other Icelandic residents, fuelling an unsustainable boom in domestic demand. While these residents' collateral appeared to support such a build-up in debt, this collateral had been grossly inflated by an asset price boom. Tightening credit conditions, even before the final crash in October 2008, had resulted in sharply lower share prices and real housing prices, eroding residents' capacity to support such high debt levels. The decline in asset values since then, and hence in firms' equity capital and households' net wealth, has been precipitous, necessitating rapid deleveraging. While such lending did not play a key role in the demise of the banks, it will cause credit losses for the banks going forward.

64. The banks also became indirectly exposed to foreign exchange risk, even though they were fully hedged themselves. They made foreign-currency denominated loans to residents who were not themselves fully hedged. As noted above, it is unclear the extent to which unhedged foreign-currency loans were made to non-financial firms as the bulk of foreign-currency loans were probably made to investment firms, which were acquiring foreign assets. Even so, there is evidence of some firms having borrowed in foreign currency without having matching foreign-currency assets or revenues, for example in the construction sector. The foreign-currency loans made to households, which were usually denominated in Swiss Francs or Japanese Yen, were not hedged. In light of the large depreciation of the króna since the beginning of 2008, the banks are likely to incur large credit losses on foreign-currency loans to residents that were not hedged.

To restrain the build-up of systemic risks, macro- and micro-prudential supervision must interact

65. The CBI, which is the financial stability regulator, warned about some of these risks but had no means of translating the warnings into action at the micro-prudential supervision level. At the same time, the micro-prudential regulator (the FME), which is charged with supervising individual financial institutions, had no legal basis for modifying its practices to head-off systemic risks that did not arise from the potential failure of an individual financial institution. If such a scenario is to be avoided in the future, it will be necessary to give a legal basis for tightening prudential supervision settings to counter a build-up in systemic risk, such as by implementing countercyclical capital adequacy requirements and imposing additional capital requirements on foreign-currency denominated lending to entities for which such borrowing is not hedged. In addition, the CBI will need to have timely access to the required information from the FME, which did not always occur. Putting such a reform into practice could require merging the CBI and the Financial Services Authority (FME), or at least bringing them under the same administrative umbrella (as in Finland and Ireland), as planned.

***Micro-prudential supervision needs to be strengthened*[13]**

66. As noted above, the three main banks had unusually large exposures to highly leveraged firms or individuals whose main activity was investing in shares or venture capital or speculative activities. At the end of June 2008, there were a total of 23 exposures over the 10% limit of own funds (6 to 10 in each bank). These exposures constituted 94-174% of each bank's own funds. The Jännäri Report considered that it was very unusual for banks as large as these to have so many large exposures of this nature and judged bank behaviour in this respect to have been highly imprudent. Indeed, based on information on exposures between 3 and 10% of own funds collected in July 2008, it appears that the true extent of large exposures was even greater because some of these smaller exposures appear to have been connected to the exposures over the 10% threshold. While the large exposures were within the generous limits (25-800% of capital) provided for in the Basel and EU frameworks, the Jännäri Report notes that these limits were never intended to be used by large banks for highly leveraged international deals: rather, they had been set this high to allow small local banks to assist local clients in need of funding for investment in productive capacity. The Jännäri report concludes that stronger regulation and stricter practice are needed in respect of large exposures and notes that the Basel II framework will facilitate this tightening in regulation and supervision. As some of the customers with large exposures had loans with more than one of the banks, raising systemic stability concerns, the Jännäri Report also recommends that a national credit register be established to monitor this risk better.

67. The problem of large exposures (and connected lending) was aggravated by the banks' complex and opaque ownership structures, which made it very difficult for the FME to ascertain with legal certainty the true extent of large exposures (and connected lending). The Jännäri Report notes that the pattern used by some of the major investor groups to disguise true, effective ownership is a sign of poor corporate culture and recommends tighter rules on transparency, more vigilance, and greater discretionary powers for the supervisors to counter such practices.

68. While the banks appeared to be well capitalised, some of this capital was of doubtful quality. The highly leveraged controlling shareholders had been allowed to borrow up to two thirds of their investment in the banks against the collateral of their shares in the banks. When these shareholders incurred catastrophic equity market losses, the loans had to be written down sharply, revealing that the banks had less capital than supposed. The Jännäri Report judged these practices as highly imprudent and recommended tighter rules and supervision against such arrangements in the future.

69. As noted above, the banking system had also become too large and complex for the FME to supervise effectively. It had neither the quantity of staff nor the variety of skills needed. In addition, it faced high staff turnover (often at double digit rates), partly caused by conditions of employment being much less attractive than at the banks. The banks had successfully lobbied to prevent the FME from getting the funding increases that it needed. While the FME's resources are likely to be adequate to supervise the smaller and simpler banks that will emerge from the restructuring process, it will be important not to allow the banks to become too big and complex again for the FME to be able to fulfil its supervisory duties effectively.

70. When the government disposes of its equity stakes in the banks, it will be important not to repeat the same errors that were committed when the banks were privatised at the beginning of the decade – controlling stakes in the banks should not again be sold to local investor groups, but rather shares should be sold to diversified shareholders or to reputable foreign banks. Moreover, it will be important to ensure that local investor groups do not subsequently acquire control of the banks. This calls for tougher rules and stricter practice on the quality of bank owners (the framework in Iceland for approving 'qualifying

13. This section draws extensively from the Jännäri (2009) Report.

holdings' in banks is described in Jännäri, 2009, pp 33-34), as recommended in the Jännäri Report. In particular, the Jännäri report recommends that the financial situation and soundness of the applicant be thoroughly scrutinised and that the funding of the proposed ownership be fully disclosed to the FME. The Report goes on to state that the FME should use boldly its right to refuse a qualifying holding in cases where it is convinced that such a holding would impede the efficient supervision of the bank in question. In addition, the Report recommends that the FME should be more courageous in using its discretionary powers with the law being changed if necessary to facilitate this process.

71. Entry of foreign banks into Iceland's domestic market could be highly beneficial for Icelanders, notably by giving access to much needed expertise and strong international banking networks. In addition, such banks would be unlikely to abandon their relatively small Icelandic subsidiaries if they got into difficulties as this would be very costly to the international bank's reputation, relieving the Icelandic taxpayer of the burden of rescuing banks. Other small countries, such as New Zealand, have found that having a banking system that consists almost entirely of well-run fully-owned subsidiaries of foreign banks particularly advantageous during a period of global financial turmoil – these banks continue to be well regarded in financial markets, facilitating ongoing access to capital markets on favourable terms.

Box 4. Recommendations to improve the financial system

Reforms to limit fiscal costs in any future banking crisis

Review and improve the deposit guarantee system, closely following developments within the EU, to protect the taxpayer from new large costs.

Strengthen controls on the quality of collateral offered at the Central Bank of Iceland (CBI) discount window to ensure that the CBI, and hence the taxpayer, is never again left holding collateral of little value if banks fail. At a minimum, the mechanisms by which banks "manufactured" capital should not be allowed to work again. *Government authorisation should be required for a substantial expansion of the use of discount window facilities that have the potential to threaten CBI solvency.*

Reforms to restore the smooth functioning of the banking system

Move bad assets into an asset management company to reduce uncertainty about the strength of banks' balance sheets arising from uncertainty about the extent to which assets will eventually have to be written down.

Streamline the banks to make them profitable. This is likely to entail downsizing and merger (provided that this does not undermine competition in banking services).

The government should not require the banks to resolve their short-term currency mismatch and associated negative carry problems by obliging clients to switch their foreign-currency loans into króna loans where that would create a foreign-currency exposure for the clients. Given that the the real value of the króna appears to be well below its equilibrium value, such a foreign currency exposure could well end up inflicting heavy losses on exporters.

Reforms to strengthen prudential regulation and supervision

To restrain the build-up of systemic risks in the future, macro-prudential supervision should have timely access to the required information and should be given a legal basis to restrain bank behaviour. To implement this reform effectively, it may be necessary to merge the CBI, the macro-prudential supervisor, and the Financial Services Authority (FME), the micro-prudential supervisor, or at least bring them under the same administrative umbrella, as planned.

Bank supervisors should not again allow the banking system to become too large and complex for them to be able to carry out their supervisory duties effectively.

Bank supervisors should lay down tougher rules, and subsequently apply stricter practice on large exposures, connected lending and quality of owners, using discretionary judgement when necessary, as recommended in the Jännäri report.

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